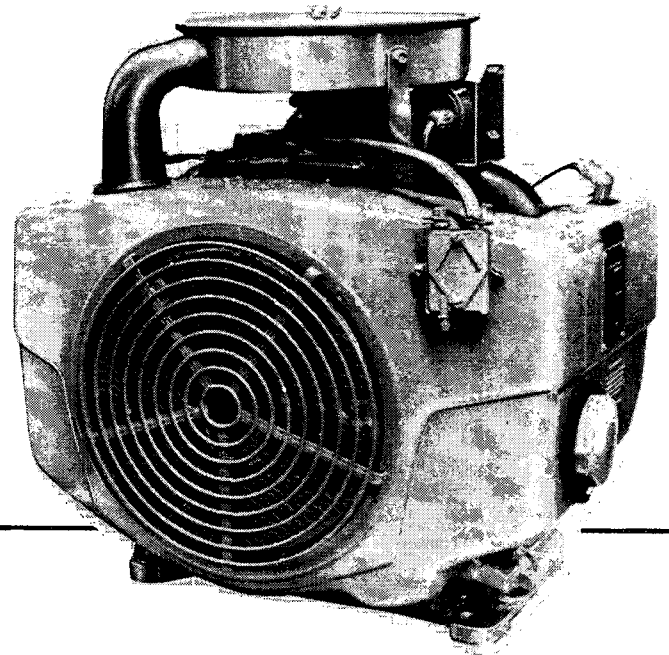


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Onan

Parts Manual

NHC-
NHCV
Engine



940-0251
3-90 (Spec A-E)
Replaces 9-86 (Spec A-E)
Printed in U.S.A.

MODEL IDENTIFICATION

To avoid errors or delay in filling your parts order, always give the MODEL, SPEC NO. and SERIAL NO. from the Onan nameplate.

For handy reference, insert your nameplate information in the spaces below.

MODEL AND SPEC NO.

SERIAL NO.

DIGITAL CONTROL SOFTWARE VERSION
AND DATE (IF APPLICABLE)

SAFETY PRECAUTIONS

The following symbols are used in Onan manuals to alert users to the potentially dangerous conditions relating to maintenance of equipment and replacement of parts. Please read and observe.

DANGER

This symbol warns of immediate hazards which will result in severe personal injury or death.

WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or product or property damage.

PRODUCT SAFETY PRECAUTIONS

WARNING

Service and repair of Onan equipment must be performed by trained, experienced personnel only. Improper service or repair may result in property damage, severe personal injury or death. Do not use this catalog as a guide to servicing your equipment. Read and follow the IMPORTANT SAFETY INSTRUCTIONS in the Service Manual appropriate for the equipment you are working on.

WARNING

Contact with USED ENGINE OILS has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When checking or changing engine oils take all necessary precautions not to ingest, breathe the fumes or contact the used oil.

WARNING

Contact with ASBESTOS has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When handling engine gaskets take all necessary precautions not to ingest, breathe or contact the dust from the gaskets! Use adequate ventilation and wear protective gloves, masks and clothing!

WARNING

Contact with BENZINE and LEAD, found in gasoline, fuel additives and solvents has been identified by a United States federal agency and some USA state agencies as causing CANCER or REPRODUCTIVE TOXICITY. When checking, draining or adding gasoline and fuel additives or using solvents take all necessary precautions not to ingest, breathe the fumes or contact the liquids. Use adequate ventilation and wear protective gloves, masks and protective clothing!

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INTRODUCTION

This catalog applies to the Industrial NHC and NHCV Engines listed below, and factory installed options. Parts are arranged in groups of related items. Each illustrated part is identified by a reference number corresponding to the same reference number in the parts list for that group. Parts illustrations are typical. Using the *MODEL* and *SPEC NO.* from the nameplate, select the *Parts Key No.* (1, 2, etc., in the last column) that applies to your engine. This *Parts Key No.* represents parts that differ between models. Unless otherwise mentioned in the description, parts are interchangeable between models. Right and left sides are determined by facing the blower end (front) of the engine.

ENGINE DATA TABLE

MODEL AND SPEC NO. £	FEATURES	PARTS KEY NO.
NHC-MS/*	Pressure Flow Cooling	1
NHCV-MS/*	Vacu-Flo Cooling	2

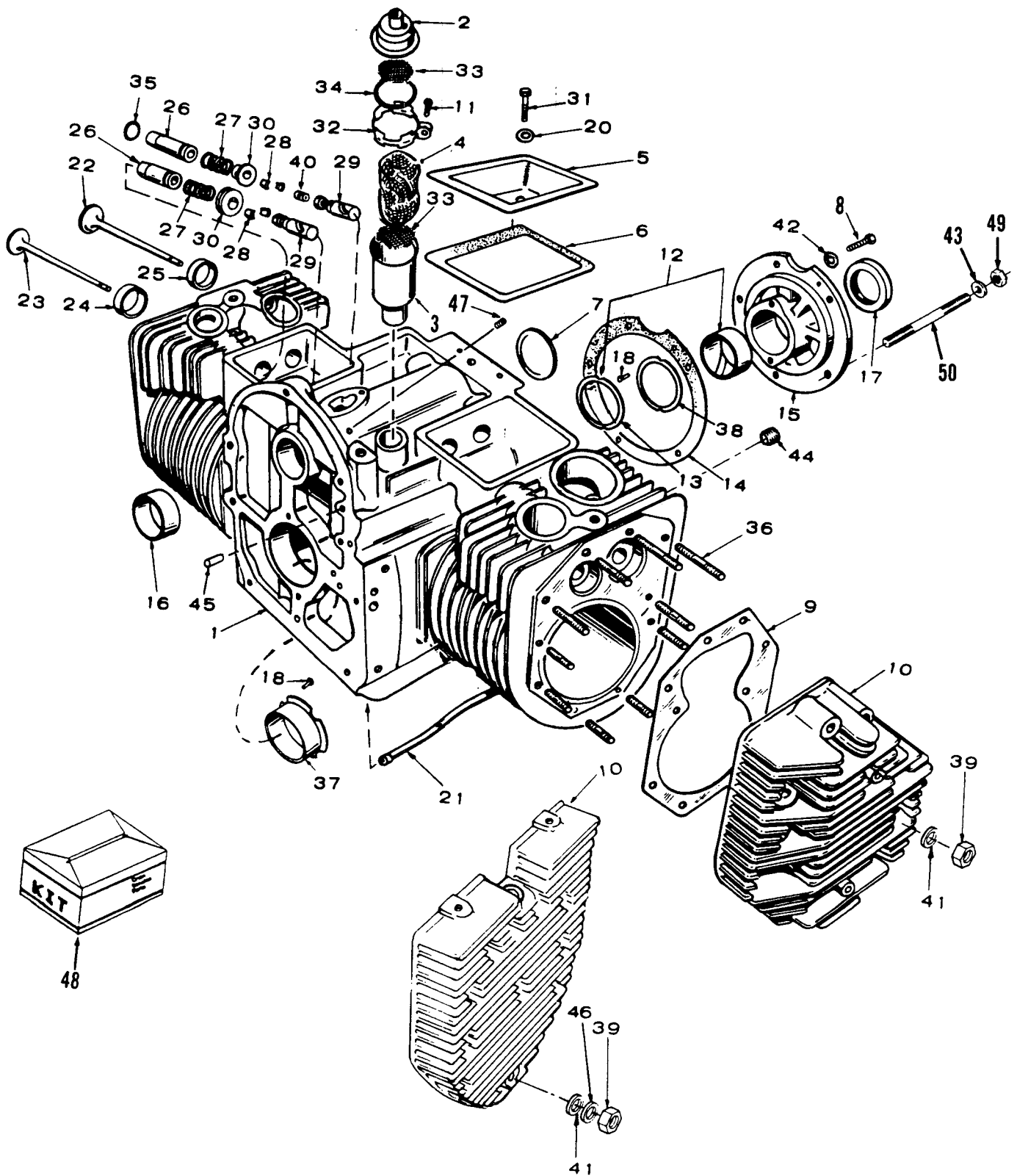
* - The Specification Number 1 identifies a standard model; specification numbers other than 1 indicates customer ordered options.

£ - The Specification Letter advances (A to B, B to C, etc.) with each major manufacturing change.

STANDARD ENGINE PARTS SECTION

This section contains the engine parts used on standard engines listed in the Engine Data table.

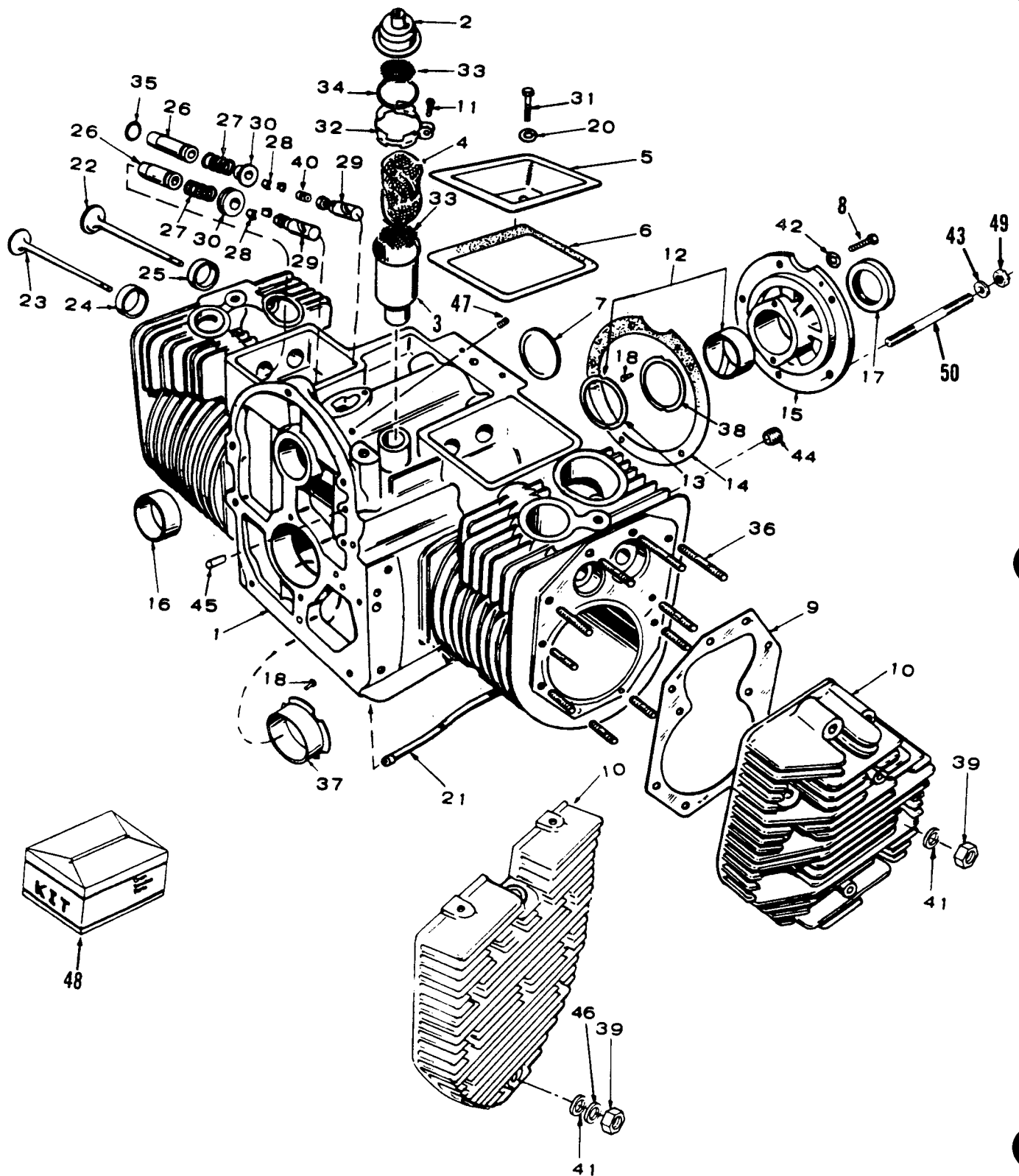
Cylinder Block



Cylinder Block

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Block, Cylinder (Includes Parts Marked *)	25			Insert, Valve Seat - Intake
			Spec A through C (with Mechanical Fuel Pump)	110-1933	2	*	Standard
110-1983	1		Engines with Standard Bearing Plate	110-1933-02	2		.002" Oversize
110-2276	1		Engines with SAE A Bearing Plate	110-1933-05	2		.005" Oversize
110-2275	1		Engines with SAE B Bearing Plate	110-1933-10	2		.010" Oversize
			Spec A through E (with Vacuum Pulse or Electric Fuel Pump)	110-1933-25	2		.025" Oversize
110-2686	1		Engines with Standard Bearing Plate	26			*Guide, Valve
110-2874	1		Engines with SAE A Bearing Plate	110-3167	2		Engines without Valve Seals
110-3028	1		Engines with SAE B Bearing Plate	110-3167	2		Intake
2	123-0954	1	Cap and Valve, Breather				Exhaust
3	123-0952	1	*Tube, Breather	110-3168	2		Engines with Valve Seals
4	123-1417	1	Baffle, Tube - Breather	110-3167	2		Intake
5	110-1624	2	Cover, Compartment - Valve	110-0539	4		Exhaust
6	110-1720	2	Gasket, Cover - Valve	27	110-0639	8	Spring, Valve
7	517-0048	1	*Plug, Expansion	28			Lock, Spring - Valve
8	800-0051	5	Screw, Cap - Hex Head (3/8-16 x 1-1/4") Bearing Plate Mounting	29	115-0006	4	Tappet, Valve
			Gasket, Head - Cylinder		115-0006-05	4	Standard
9			Spec A through C	30	110-0893	4	.005" Oversize
	110-1731	2	Begin Spec D				Washer, Retainer - Valve
10	110-2987	2	Head, Cylinder	31	800-0011	2	Spring
			Spec A through C				Screw, Cap - Hex Head (1/4-20 x 2")
	110-1912	1	Right Side	32	123-0951	1	Clamp, Loop - Breather Tube
	110-1913	1	Left Side				Cap
	110-3549	2	Begin Spec D	33	123-0958	2	Screen, Tube - Breather
11	809-0035	1	Screw, Tapping - Round Head (#8 x 3/4")	34	509-0117	1	Seal, O-Ring - Breather Tube
12			Bearing, Rear - Crankshaft	35	110-0068	2	*Gasket, Guide - Valve (Intake)
	101-0450	1	* Standard	36			Stud, Mounting - Cylinder Head
	101-0450-02	1	.002" Undersize				Key 1
	101-0450-10	1	.010" Undersize	520-0919	8		3/8 x 2-19/32" (Bottom 4 Holes)
	101-0450-20	1	.020" Undersize	520-0876	4		3/8 x 2-3/4" (Top 2 Holes)
	101-0450-30	1	.030" Undersize	520-0918	8		3/8 x 3" (Middle 4 Holes)
13	104-0575	2	*Washer, Thrust - Crankshaft Bearing				Key 2
14	101-0415	1	*Gasket, Plate - Bearing	520-0876	4		3/8 x 2-3/4" (Top 2 Holes)
15			Plate, Bearing - Rear	520-0717	8		3/8 x 1-7/8" (Bottom 4 Holes)
	101-0439	1	* Standard	520-0773	8		3/8 x 2-9/16" (Middle 4 Holes)
	101-0430	1	* Optional - SAE B	37			Bearing, Sleeve - Flanged
	101-0437	1	* Optional - SAE A	101-0432	1	*	Standard
16	101-0405	2	*Bearing, Camshaft	101-0432-02	1		.002" Undersize
17	509-0041	1	Seal, Oil - Crankshaft (1/2"W)	101-0432-10	1		.010" Undersize
18	516-0072	4	*Pin, Stop - Bearing	101-0432-20	1		.020" Undersize
20	526-0063	2	Washer, Flat - Copper (1/4" Screw)	101-0432-30	1		.030" Undersize
21	120-0680	1	*Tube, Oil - Crankcase	38	104-0776	AR	*Shim, Thrust - Crankshaft (.005")
22	110-1718	2	Valve, Intake	39	104-0091	20	Nut, Hex (3/8-24)
23	110-1719	2	Valve, Exhaust	40	509-0168	2	Seal, Valve - Intake (Optional)
24			Insert, Valve Seat - Exhaust	41	526-0250	20	Washer, Flat - Heat Treated
	110-1716	2	* Standard	42	850-0050	5	Washer, Lock (3/8")
	110-1716-02	2	.002" Oversize	43	526-0251	5	Washer, Flat (3/8" Screw)
	110-1716-05	2	.005" Oversize				SAE A,B - 4 Boss Rear
	110-1716-10	2	.010" Oversize	44	803-0071	2	Bearing Plate
	110-1716-25	2	.025" Oversize	45	516-0141	2	Screw, Set (3/8-16 x 1/2")
				46	851-0029	24	*Pin, Alignment - Gearcase
				47	505-0057	1	Washer, Compression (3/8" ID x 1-1/16" OD) - Begin Spec D
							Plug, Head - Square - Pulse Line Hole (1/8")

Cylinder Block



Cylinder Block

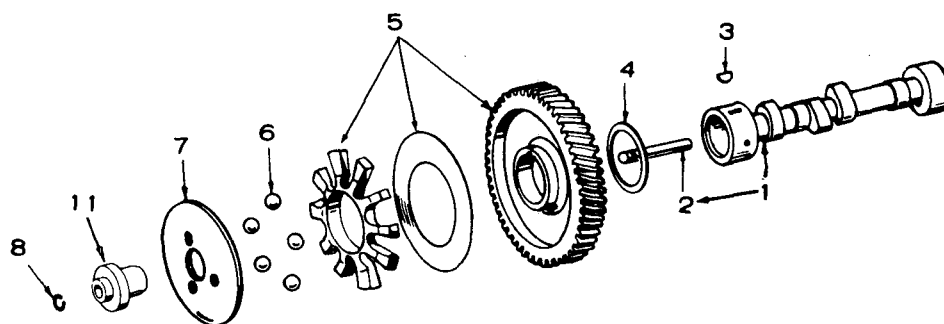
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
48			Kit, Gasket
	168-0122	1	Complete Engine - Spec A through C
	168-0157	1	Complete Engine - Begin Spec D
	168-0121	1	Carbon Removal - Spec A through C
	168-0158	1	Carbon Removal - Begin Spec D

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
49	104-0091	5	Nut, Hex (Special) - SAE A,B - 4 Boss Rear Bearing Plate
50	520-0736	5	Stud (3/8 x 1-21/32") - SAE A,B - 4 Boss Rear Bearing Plate

AR - Quantity as Required.

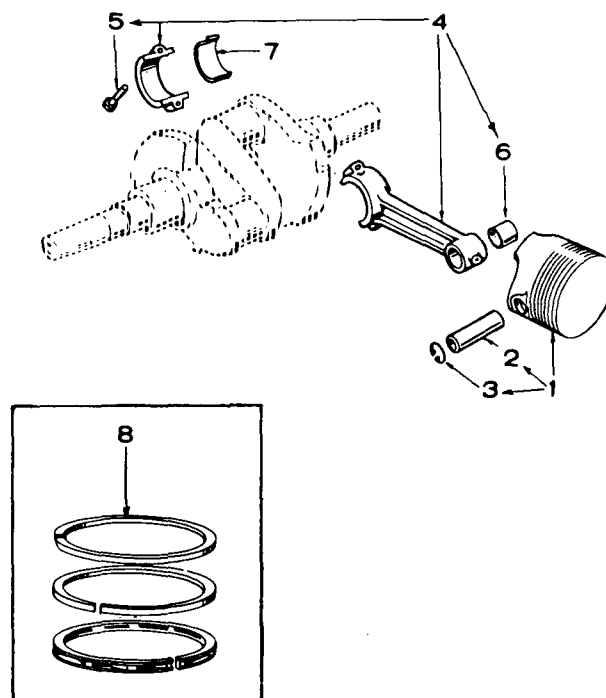
* - Parts Included in Cylinder Block Assembly.

Camshaft



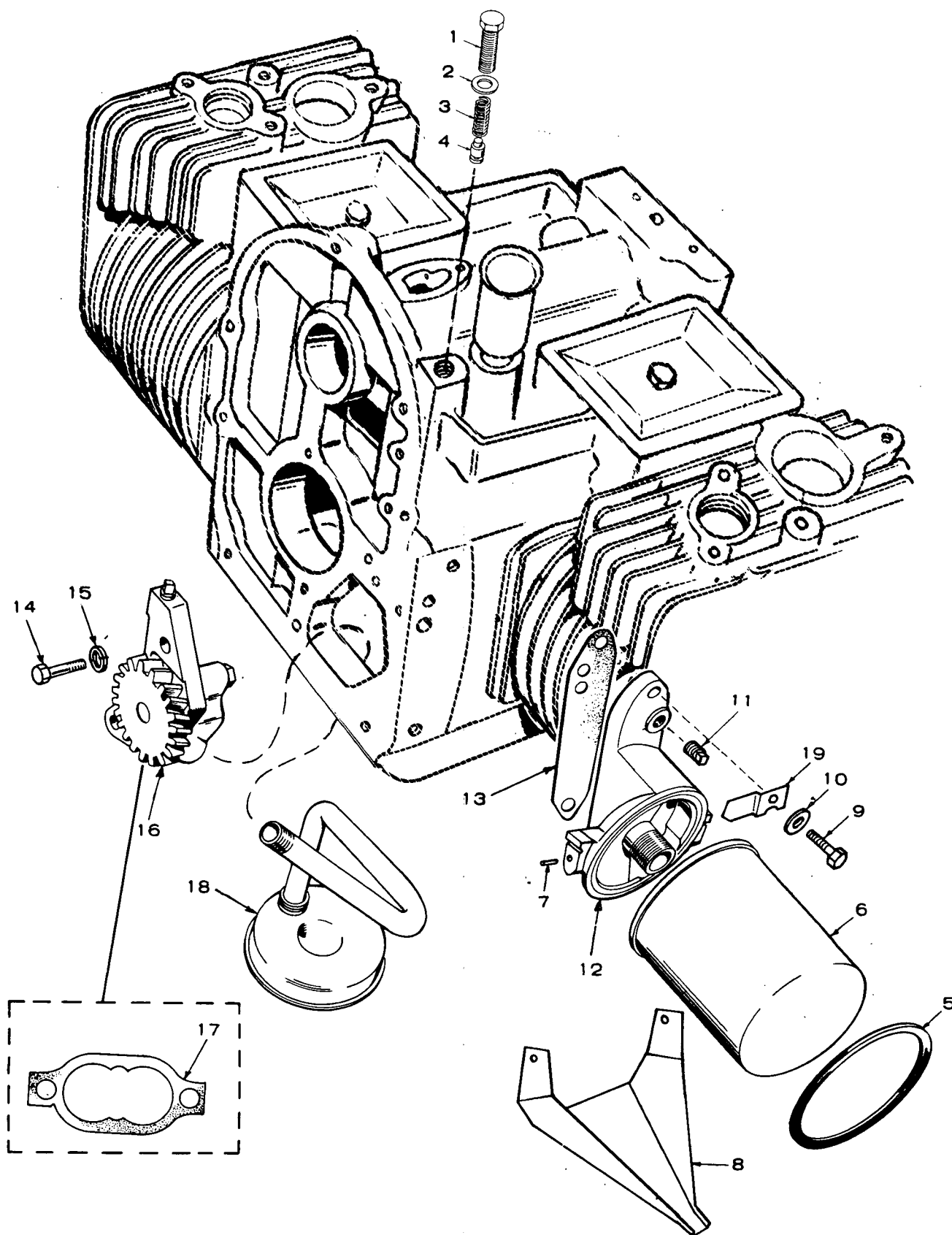
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	105-0594	1	Camshaft (Includes Center Pin)	6			Ball, Fly - Governor
2	150-0075	1	Pin, Camshaft		510-0015	5	Used on 5 Ball Governor
3	515-0001	1	Key, Gear - Camshaft		510-0015	6	Used on 6 Ball Governor
4	105-0541	1	Washer, Thrust		510-0015	10	Used on 10 Ball Governor
5	105-0332	1	Gear, Camshaft (Includes Spacer and Plate)	7	150-1520	1	Cup, Governor
				8	150-0078	1	Ring, Retaining
				11	150-1519	1	Hub, Cup - Governor

Piston and Rod



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Piston and Pin (Includes Pin and Retaining Rings)	6	114-0036	2	Bushing, Pin - Piston
			Spec A through C	7			Bearing, Half - Connecting Rod
	112-0180	2	Standard		114-0188	4	Standard
	112-0180-05	2	.005" Oversize		114-0188-02	4	.002" Undersize
	112-0180-10	2	.010" Oversize		114-0188-10	4	.010" Undersize
	112-0180-20	2	.020" Oversize		114-0188-20	4	.020" Undersize
	112-0180-30	2	.030" Oversize		114-0188-30	4	.030" Undersize
	112-0180-40	2	.040" Oversize	8			Ring Set, Piston
			Begin Spec D				Spec A through C
	112-0228	2	Standard		113-0165	2	Standard
	112-0228-05	2	.005" Oversize		113-0165-05	2	.005" Oversize
	112-0228-10	2	.010" Oversize		113-0165-10	2	.010" Oversize
	112-0228-20	2	.020" Oversize		113-0165-20	2	.020" Oversize
	112-0228-30	2	.030" Oversize		113-0165-30	2	.030" Oversize
	112-0228-40	2	.040" Oversize		113-0165-40	2	.040" Oversize
2			Pin, Piston				Begin Spec D
	112-0112	2	Spec A through C		113-0203	2	Standard
	112-0069	2	Begin Spec D		113-0203-05	2	.005" Oversize
3	518-0294	4	Ring, Retaining - Piston Pin		113-0203-10	2	.010" Oversize
4	114-0203	2	Rod, Connecting (Less Bearing)		113-0203-20	2	.020" Oversize
5	805-0010	4	Bolt, Cap - Rod		113-0203-30	2	.030" Oversize
					113-0203-40	2	.040" Oversize

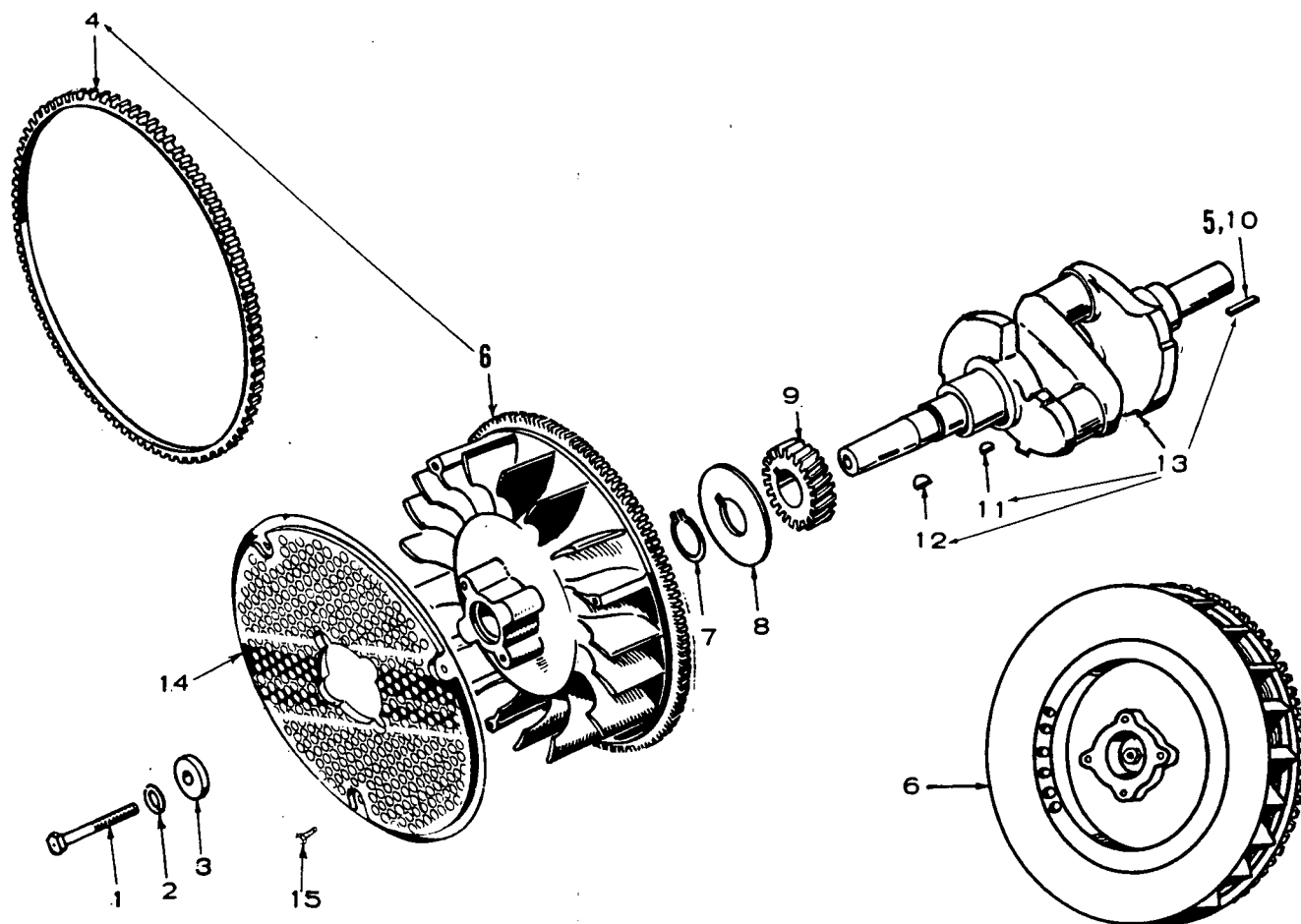
Oil System



Oil System

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	801-0050	1	Screw, Cap - Hex Head (3/8-24 x 1")	9	800-0028	2	Screw, Cap - Hex Head (5/16-18 x 1")
2	526-0066	1	Washer, Flat - By-Pass Valve	10	526-0065	2	Washer, Flat - Copper (5/16" Screw)
3	120-0140	1	Spring, Valve - By-Pass	11	505-0057	1	Plug, Pipe - 1/8 NPT
4	120-0398	1	Valve, Check - Oil By-Pass	12	122-0320	1	Adapter, Filter - Oil
5	122-0347	1	Seal, Air - Oil Filter	13	122-0321	1	Gasket, Adapter
6	122-0323	1	Filter, Oil	14	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
7	815-0194	2	Screw, Tapping - Hex Head with External Tooth Lockwasher (#10-32 x 3/8")	15	850-0040	2	Washer, Lock - Spring (1/4")
8			Drain, Filter - Oil	16	120-0491	1	Pump, Oil
	122-0352-50	1	Key 1 - Painted	17	120-0161	1	Kit, Gasket - Oil Pump
	122-0360-50	1	Key 2 - Painted	18	120-0648	1	Cup, Intake - Oil Pump
	122-0360	1	Key 2 - Unpainted	19	160-1190	1	Pointer, Timing - Ignition - Key 2 Only

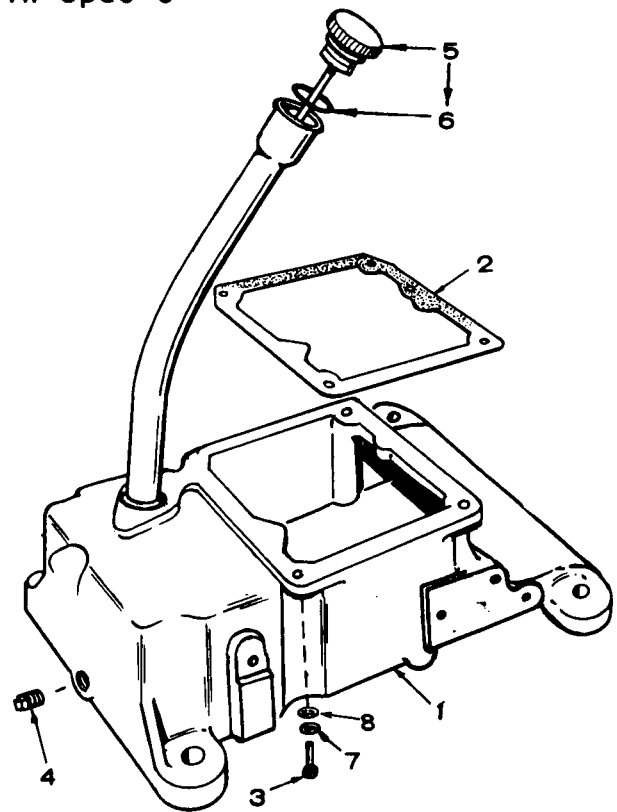
Crankshaft and Flywheel



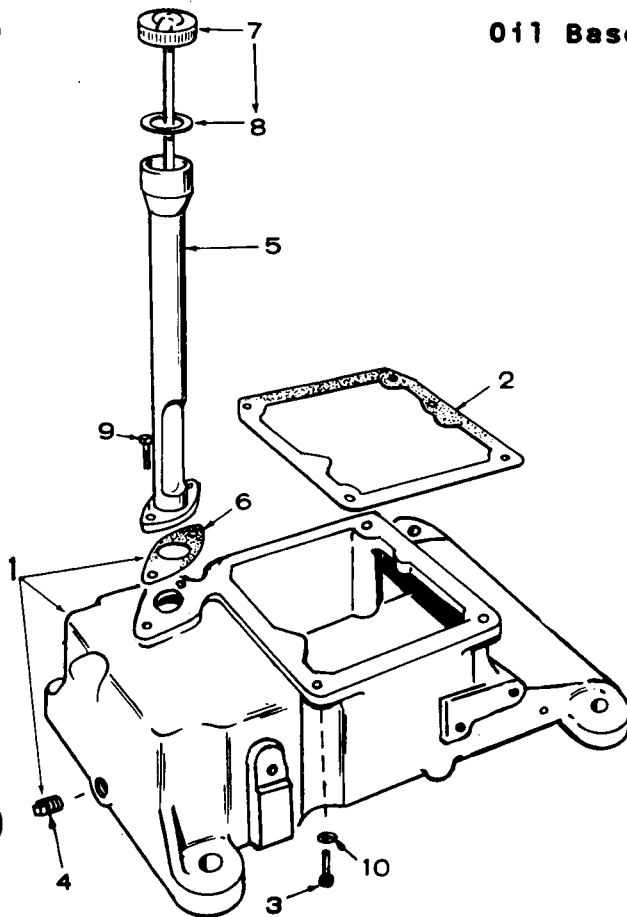
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	104-0170	1	Screw, Mounting - Flywheel - Special	7	518-0014	1	Ring, Retaining - Gear
2	850-0055	1	Washer, Lock - Spring (7/16")	8	104-0043	1	Washer, Retaining - Gear
3	526-0262	1	Washer, Flat (7/16" Screw)	9	104-0032	1	Gear, Crankshaft
4	134-0673	1	Gear, Ring (Part of Flywheel)	10	515-0198	1	Key, Stub - Crankshaft (3/8 x 3/8 x 2-1/2")
5	515-0103	1	Key, Stub - Crankshaft (1/4 x 1/4 x 2")	11	515-0001	1	Key, Gear - Crankshaft
6			Flywheel (Includes Ring Gear)	12	515-0263	1	Key, Flywheel
			Engines w/o Flywheel	13			Crankshaft (Includes Keys)
			Alternator		104-1312	1	1-7/16" OD Stub Shaft
			Key 1		104-1363	1	1-1/8" OD Stub Shaft
	134-2464	1	Spec A,B,C		104-1311	1	9 Tooth Spline
	134-4044	1	Begin Spec D		104-1500	1	11 Tooth Spline
			Key 2		104-1310	1	13 Tooth Spline
	134-2768	1	All Specs	14	134-2433	1	Guard, Flywheel
			Engines with Flywheel	15	821-0010	3	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
			Alternator				
			Key 1				
			15 Ampere (Phelon)				
	134-2462	1	Spec A,B,C				
	134-4045	1	Begin Spec D				
			20 Ampere				
	134-2467	1	Synchro				
	134-4045	1	Phelon				
			Key 2				
	134-2769	1	Begin Spec C (Synchro)				
	134-2770	1	Spec A,B,C,D (Phelon)				

Oil Base - Begin Spec C

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	102-1157	1	Base Oil - Universal (Includes Fill Tube and Drain Plugs)
2	102-1200	1	Gasket, Base
3	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
4	505-0247	3	Plug, Drain
5	123-1298	1	Cap and Indicator, Oil Fill
6	509-0142	1	Gasket, Oil Fill Cap (O-Ring)
7	850-0050	4	Washer, Lock - Spring (3/8")
8	526-0026	4	Washer, Flat (3/8" Screw)

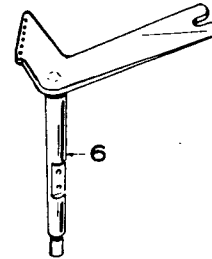
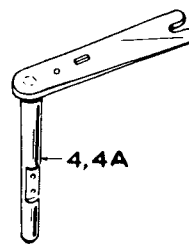
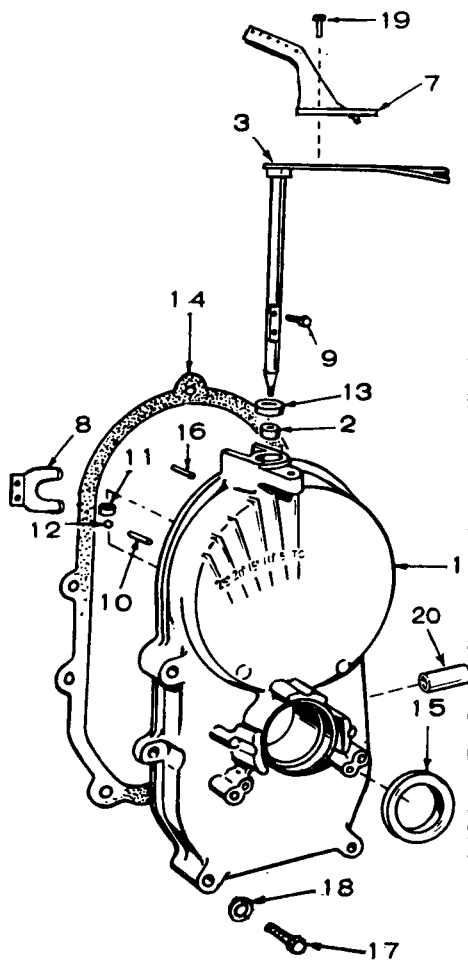


Oil Base - Spec A and B



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	102-1048	1	Base Oil (Includes Fill Tube Gasket and Drain Plug)
2	102-0646	1	Gasket, Base
3	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
4	505-0056	3	Plug, Drain
5	TUBE, OIL FILL		
	123-1117	1	Key 1
	123-1272	1	Key 2
6	141-0078	1	Gasket, Fill Tube
7	CAP & INDICATOR, OIL FILL		
	123-0527	1	Key 1
	123-1290	1	Key 2
8	123-0191	1	Gasket, Oil Fill Cap
9	821-0010	2	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2")
10	850-0050	4	Washer, Lock - Spring (3/8")

Gearcase

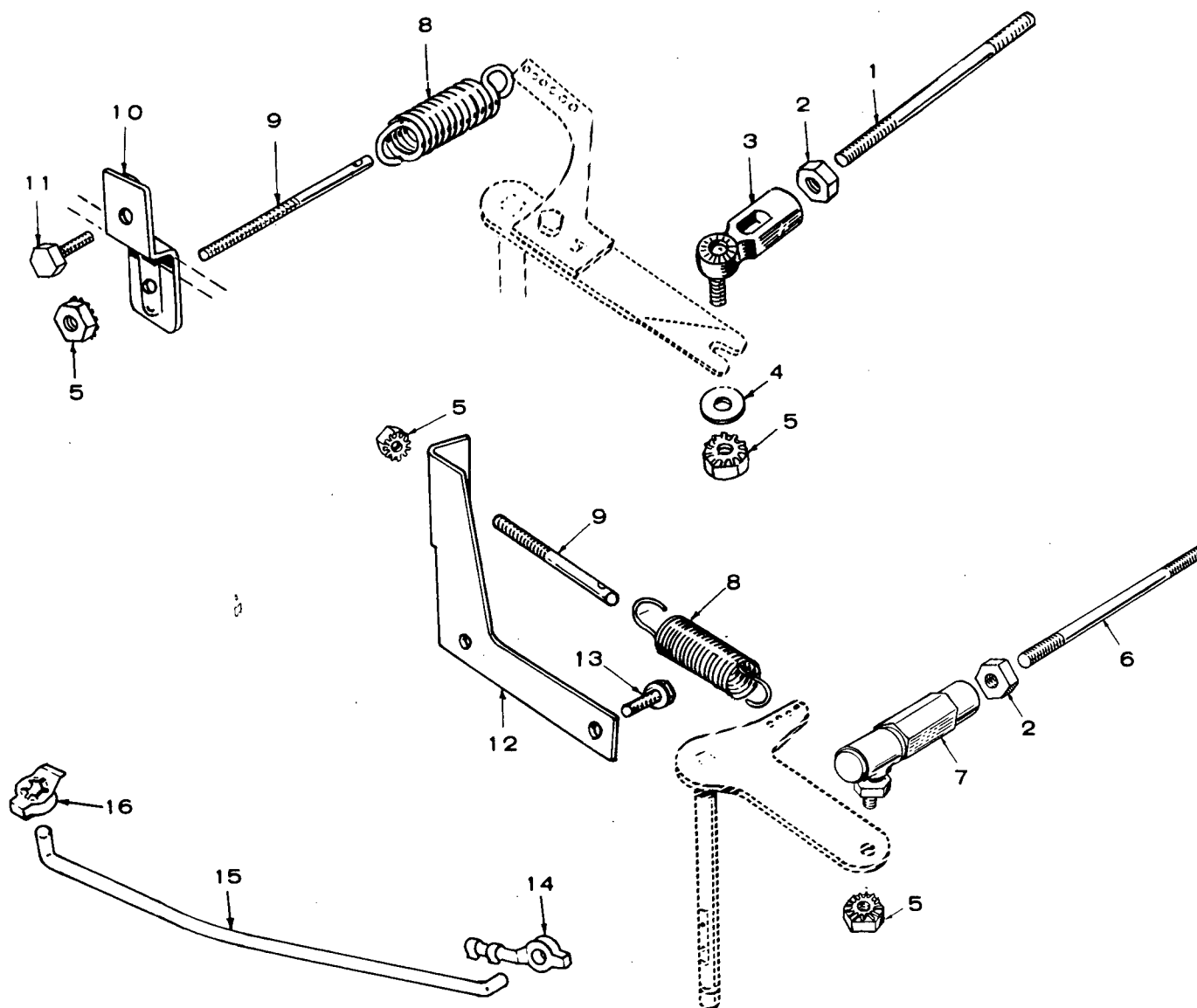


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Gearcase (Includes Parts Marked *)
	103-0641	1	Key 1
	103-0791	1	Spec A-C
			Begin Spec D
	103-0661	1	Key 2
			Spec A through E
2			*Bearing (Upper Governor Shaft)
			Key 1
	510-0013	1	Spec A
	510-0105	1	Begin Spec B
	510-0105	1	Key 2
3	150-1260	1	*Shaft and Arm, Governor -
			Spec A - Key 1
4	150-1450	1	*Shaft and Arm, Governor -
			Spec B and C - Key 1
4A	150-1470	1	*Shaft and Arm, Governor -
			Begin Spec D - Key 1
6	150-1601	1	*Shaft and Arm, Governor -
			Spec A through E - Key 2
7	150-1073	1	Arm, Extension - Spec A
			through C - Key 1
8	150-1187	1	*Yoke, Shaft - Governor

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
9	815-0046	2	*Screw, Machine - Pan Head,
			Cross Recessed (#8-32 x 3/8")
10	516-0130	1	*Pin, Roll
11	510-0008	1	*Bearing, Needle - Spec A Only
12	510-0014	1	*Bearing, Ball
13	509-0008	1	*Seal, Oil
14	103-0408	1	Gasket, Gearcase
15	509-0040	1	*Seal, Oil - Crankshaft (9/16"W)
16	516-0141	2	Pin, Roll
17			Screw, Cap - Hex Head
	800-0032	4	5/16-18 x 1-3/4"
	800-0034	1	5/16-18 x 2-1/4"
18	526-0065	5	Washer, Flat (5/16" Screw)
			Copper
19	815-0181	1	Screw, Tapping - Hex Head
			Brass with External Tooth
			Lockwasher (#10-32 x 1/2")
20	149-1299	1	*Tube, Vacuum Port (Use on
			Sets with Vacuum Fuel Pump)

* - Parts Included in Gearcase.

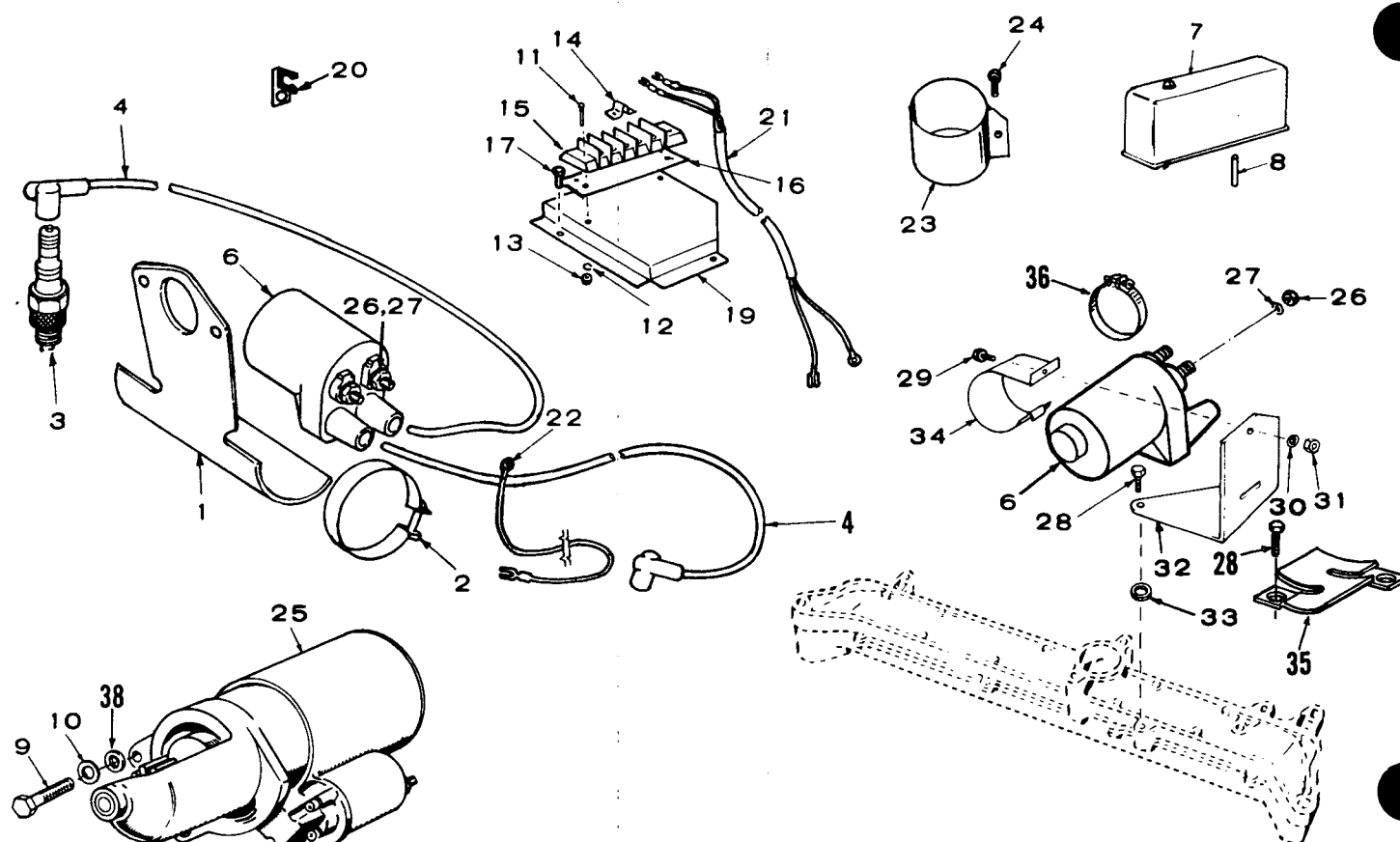
Governor



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	520-0623	1	Stud - Prior to Serial #832098
2	870-0053	2	Nut, Hex (10-32")
3	150-0939	2	Joint, Ball (Nylon)
4	526-0196	2	Washer, Flat Aluminum (#10 Screw) - Prior to Serial #832098
5	NUT, HEX WITH ET (#10-32)		
	870-0053	2	Spec A Through C
	870-0053	1	Begin Spec D
6	STUD - BEGIN SERIAL #832098 THROUGH SPEC C		
	520-0187	1	Key 1
	520-0690	1	Key 2
7	150-0639	2	Joint, Ball (Steel)
			- Begin Serial #832098 Through Spec C
8	SPRING, GOVERNOR		
	150-0098	1	Spec A Through C
	150-1214	1	Begin Spec D - Key 1 (15 Coils)
	150-0098	1	Begin Spec D (11 Coils)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
9	STUD, SPEED ADJUSTMENT		
			Key 1
	150-0147	1	Spec A Through C
	150-0694	1	Begin Spec D
			Key 2
	150-1418	1	Spec A Through C
	150-1594	1	Begin Spec D
10	150-1359	1	Bracket, Speed Stud
			- Spec A Through C - Key 1
11	821-0010	1	Screw, Cap - HWH (1/4-20 x 1/2")
			- Spec A Through C - Key 1
12	BRACKET, SPEED STUD		
	150-1433	1	Key 2 - Begin Spec D
	150-1433	1	Key 1 - Begin Spec D
13	SCREW, CAP - HWH (1/4-20 x 1/2")		
	821-0010	2	Key 2
	821-0010	2	Begin Spec D - Key 1
14	518-0004	1	Clip, Throttle Link
			- Begin Spec D
15	150-1613	1	Rod, Governor Control
			Begin Spec D
16	870-0278	1	Clip, Throttle Link
			- Begin Spec D

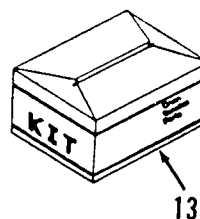
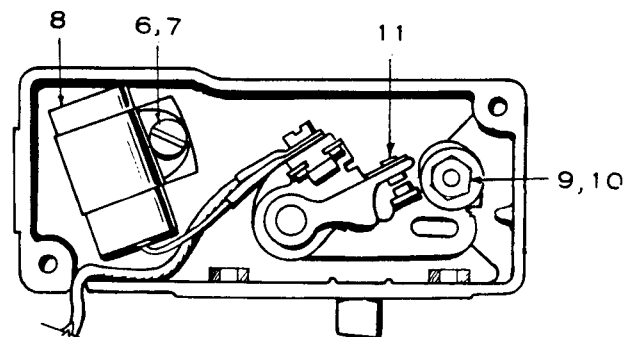
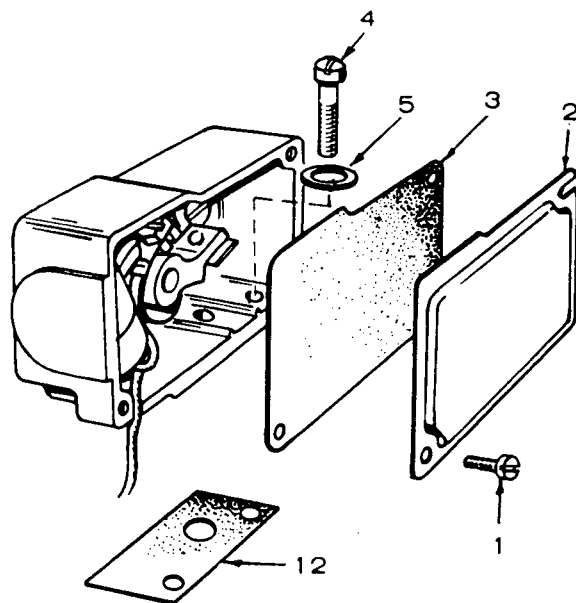
Ignition System and Starter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	166-0641	1	Bracket, Mounting - Coil - Begin Spec C
2	503-0311	2	Clamp, Coil - Begin Spec C
3			Plug, Spark
	167-0240	2	Spec A through C Non-Resistor
	167-0247	2	Resistor
	167-0263	2	Resistor - Begin Spec E
4	167-1602	2	Cable, Plug - Spark
6	166-0772	1	Coil, Ignition
7			Box, Breaker (See Separate Page for Components)
	160-1303	1	Begin Spec C
	160-1158	1	Spec A and B
8	160-1151	1	Plunger
9	800-0051	2	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
10	850-0050	2	Washer, Lock - Spring (3/8")
11	812-0081	2	Screw, Machine - Round Head (#8-32 x 5/8")
12	850-0025	2	Washer, Lock - Spring (#8)
13	860-0008	2	Nut, Hex (#8-32)
14	332-1043	1	Jumper, Terminal
15	332-0604	1	Block, Terminal
16	332-1273	1	Strip, Marker
17	815-0340	2	Screw, Self-Locking - Hex Head (#10-32 x 3/8")
19	301-4824	1	Bracket, Block - Terminal
20	167-0188	1	Clip, Cable
21	338-1100	1	Harness, Wiring - Starter Solenoid to Terminal Block

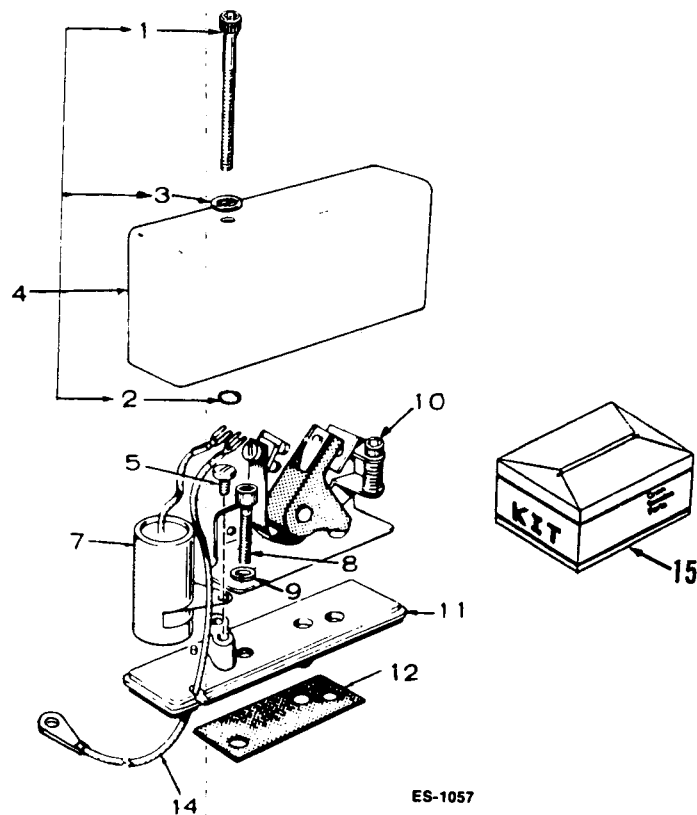
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
22			Lead
	336-2378	2	Coil to Breaker Points
	336-3145	1	Breaker Points to Terminal Block
23	166-0617	1	Clamp, Mounting - Coil - Spec A and B Only
24	821-0010	1	Screw, Self-Locking - Hex Washer Head (1/4-20 x 1/2") - Spec A and B Only
25			Starter (See Separate Page for Components)
	191-0734	1	Spec A
	191-1052	1	Begin Spec B
26	166-0554	2	Nut, Hex (Special)
27	850-2005	2	Washer, Lock - Spring
28	815-0261	2	Screw, Hex Washer Head (1/4-20 x 1/2")
29	800-0004	1	Screw, Cap - Hex Head (1/4-20 x 5/8")
30	850-0040	1	Washer, Lock - Spring (1/4")
31	862-0001	1	Nut, Hex (1/4-20)
32	166-0679	1	Bracket, Coil - Ignition - Begin Spec D - Early Models
33	526-0016	2	Washer, Flat (1/4" Screw)
34	166-0588	1	Clamp, Coil - Begin Spec D - Early Models
35	166-0741	1	Bracket, Coil - Begin Spec D - Later Models
36	503-0311	1	Clamp, Coil - Begin Spec D - Later Models
38	526-0026	2	Washer, Flat (3/8" Screw)

Breaker Box - Spec A & B Only



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	160-1158	1	Box Assembly, Breaker
1	815-0358	2	Screw, Tapping - Hex Head, Slotted (#8-32 x 5/16")
2	160-1149	1	Cover, Breaker Box
3	160-1148	1	Gasket, Cover
4	802-0034	2	Screw, Cap - Socket Head (1/4-20 x 3/4")
5	850-0038	2	Washer, Lock - Spring (1/4")
6	815-0403	1	Screw, Tapping - Pan Head (#8-32 x 5/16")
7	850-0025	1	Washer, Lock - Spring (#8)
8	312-0069	1	Condenser, Ignition
9	870-0221	1	Nut, Hex with External Tooth Lockwasher (#8-32)
10	815-0405	1	Screw, Machine - Pan Head, Cross Recessed (#8-32 x 1/2")
11	160-1154	1	Point Set, Breaker
13	160-1161	1	Tune Up Kit (Includes Point Set and Condenser)

Breaker Box - Begin Spec C

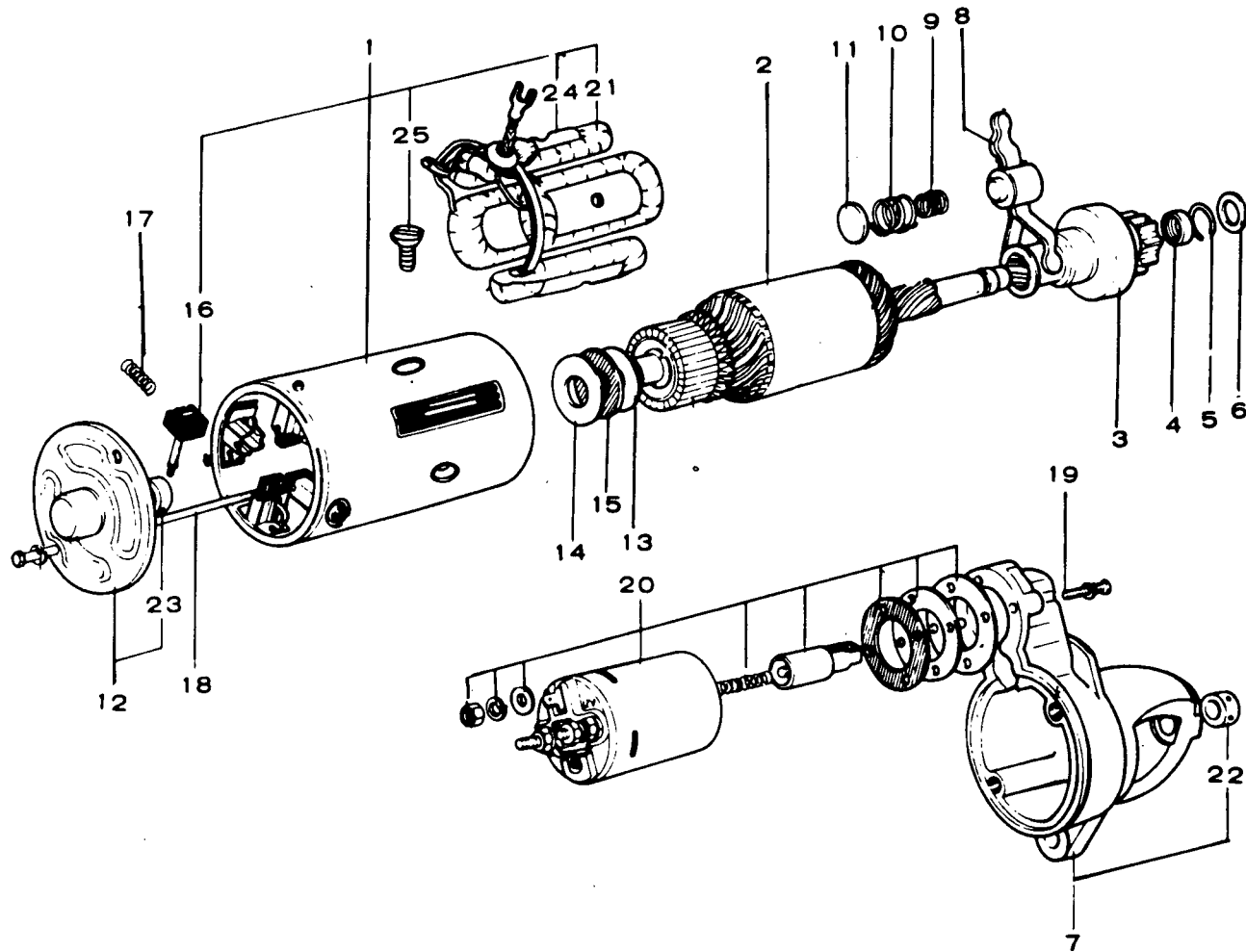


ES-1057

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	160-1303	1	Breaker Box (Includes Parts Marked *)
1	802-0022	1	*Screw, Cap - Hex Socket (#10-24 x 1-1/2")
2	509-0065	1	*Retainer (O-Ring)
3	526-0008	1	*Washer, Flat (#10 Screw)
4	160-1285	1	*Cover, Breaker Box
5	815-0358	1	*Screw, Cap - Slotted (#8-32 x 5/16")
7	312-0246	1	*Condenser
8	802-0034	2	*Screw, Cap - Socket Head (1/4-20 x 3/4")
9	850-0040	2	*Washer, Lock (1/4")
10	160-1183	1	*Point Set, Breaker
11	160-1219	1	*Base, Breaker
12	160-1150	1	*Gasket, Breaker Box
14	336-2378	1	Lead, Breaker Box to Coil
15	160-1311	1	Tune Up Kit (Includes Points and Condenser)

* - Parts Included in 160-1303 Breaker Box.

Starter Components - Spec A Only

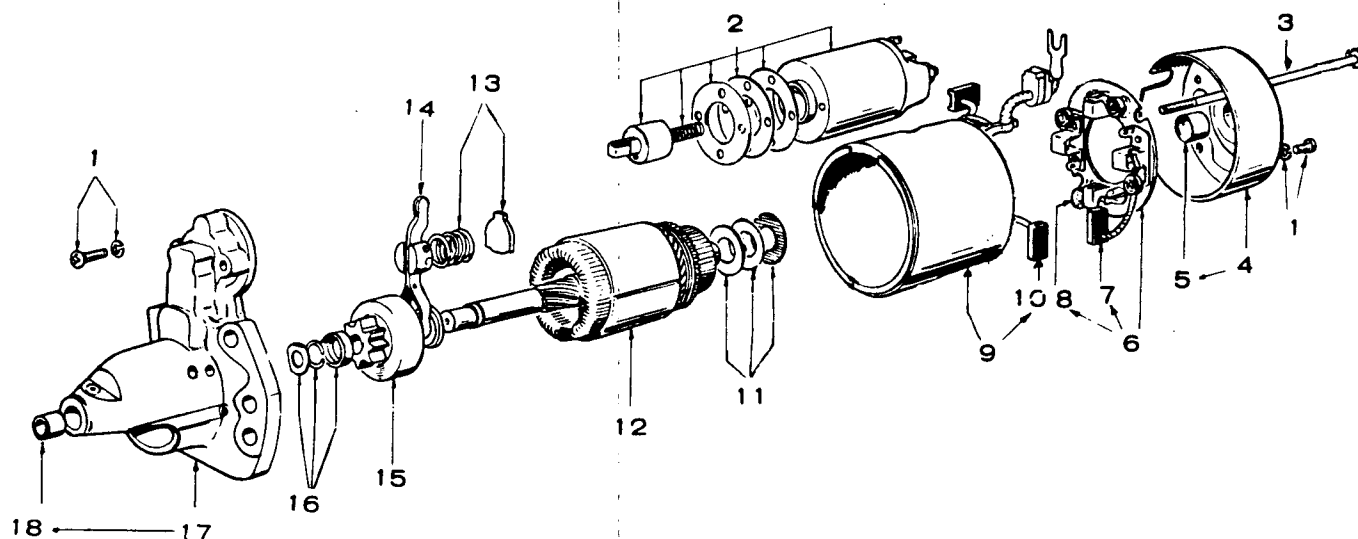


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	191-0734	1	Starter
1	191-0742	1	Yoke Assembly (Includes Parts Marked *)
2	191-0743	1	Armature, Starter
3	191-0744	1	Clutch - Pinion Gear, Starter
4	191-0745	1	Stop, Pinion Gear
5	191-0746	1	Ring, Retaining
6	191-0747	1	Washer, Thrust
7	191-0748	1	Bracket, Starter - Front (Includes Bearing)
8	191-0749	1	Lever, Clutch
9	191-0750	1	Spring, Helical, Compression (A)
10	191-0751	1	Spring, Helical, Compression (B)
11	191-0752	1	Holder, Spring
12	191-0753	1	Bracket, Starter - Rear (Includes Bearing)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
13	191-0754	1	Washer, Flat
14	191-0755	1	Washer, Flat
15	191-0756	1	Insulator, Disc
16	191-0757	4	*Brush, Starter
17	191-0758	4	Spring, Helical, Compression (Brush)
18	191-0759	2	Bolt, Machine (Through)
19	191-0760	3	Screw, Machine, Pan Head
20	191-0761	1	Solenoid, Starter
21	191-0762	1	*Coil, Field, Starter
22	191-0763	1	Bearing, Sleeve (Front)
23	191-0764	1	Bearing, Sleeve (Rear)
24	191-0765	4	*Shoe, Pole, Field Coil
25	191-0766	4	*Screw, Machine, Pan Head

* - Included in Yoke Assembly.

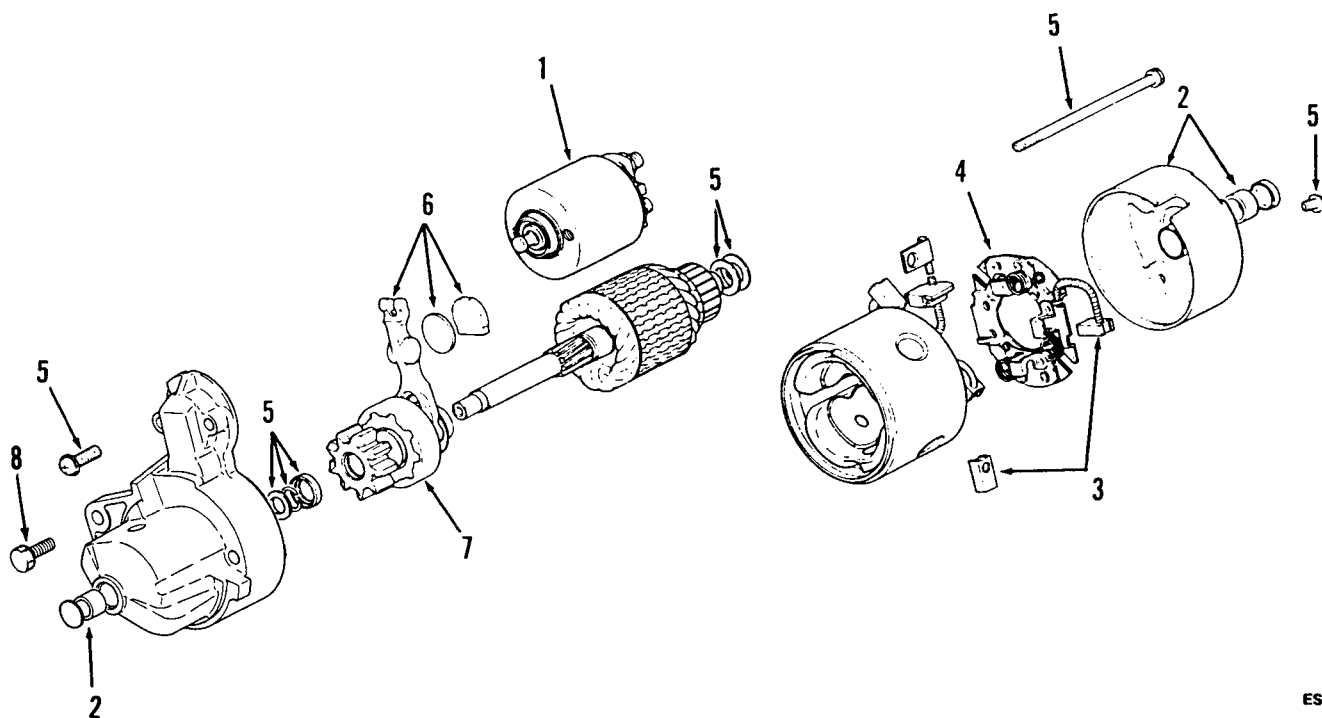
Starter Components - Spec B,C,D



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	191-1052	1	Starter
1	191-1011	1	Screw & Washer Set
2	191-0987	1	Solenoid Assembly
3	191-0988	2	Bolt - Hex Washer Head
4	191-1009	1	Bracket, Rear - Starter (Includes Rear Sleeve Bearing)
5	191-1010	1	Bearing, Sleeve (Rear)
6	191-1006	1	*Holder, Brush (Includes Negative Brush and Brush Springs)
7	191-1008	1	*Brush, Starter (Negative)
8	191-1007	3	*Spring, Helical, Compression (Brush)
9	191-1089	1	Yoke Assembly, (Includes Frame, Pole Shoes, Field Coil and Replaceable Positive Brushes)
10	191-1005	2	Brush, Starter (Positive)
11	191-0997	1	Insulating, Washer Set
12	191-1088	1	Armature, Starter
13	191-0984	1	Plate & Spring Set
14	191-0983	1	Lever, Clutch
15	191-1087	1	Clutch & Pinion Gear
16	191-0991	1	Stop Retaining Set - Pinion Gear
17	191-1086	1	Bracket, Front - Starter (Includes Front Sleeve Bearing)
18	191-0971	1	Bearing, Sleeve (Front)

* - Early BrushHolder equipped with Two (2) Negative Brushes and Four (4) Brush Springs - Completely Interchangeable with Current Brush Holder. When replacing the negative brushes on early models only one (1) is required, but two (2) may be used.

Starter Components - Solenoid Shift Begin Spec E

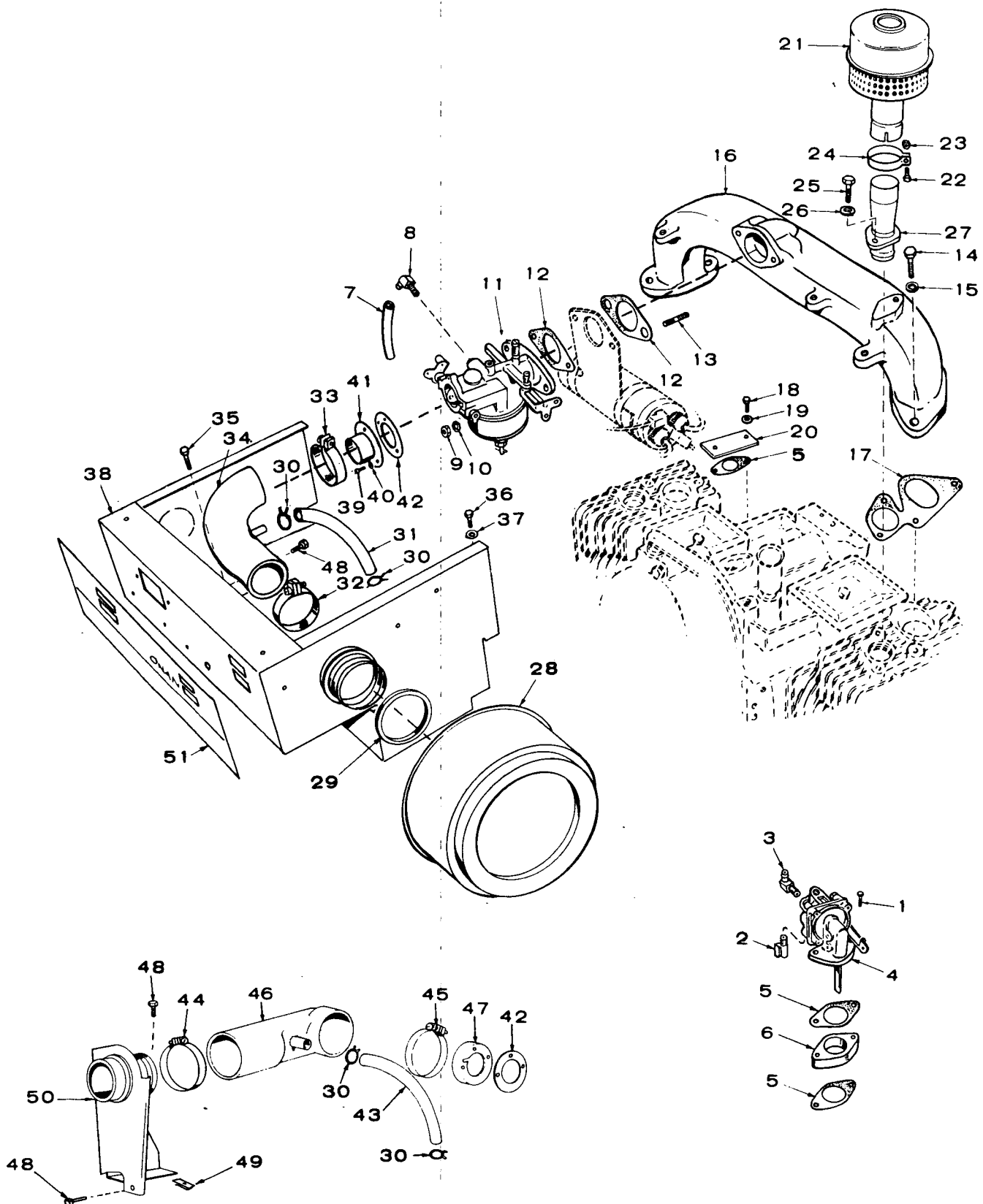


ES-1620

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1808-03	1	Motor, Starter (Complete)
1	191-1761	1	Kit, Solenoid - Starter (Includes Solenoid, Spring, Plunger)
2	191-1762	1	Kit, Bushing (Includes Front Bushing, Rear Cap with Bushing)
3	191-1763	1	Kit, Starter Brush (Includes Positive Brush [2] Negative Brush with Pigtail)
4	191-1764	1	Holder, Brush - Starter (Includes Brush Holder with Negative Brush)

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	191-1765	5	Kit, Hardware - Starter (Includes Solenoid Screws [2], Brush Holder Screws [2], Thru Bolts [2], Armature Shims [2], Pinion Stop Collar, Pinion Retaining Ring)
6	191-1766	1	Kit, Lever - Starter Shift (Includes Shift Lever, Wear Plate, Rubber Plug)
7	191-1767	1	Clutch, Starter (Includes Pinion Gear with Clutch)
8	800-0575	2	Screw, Hex Washer Head (3/8-16 x 1-1/8")

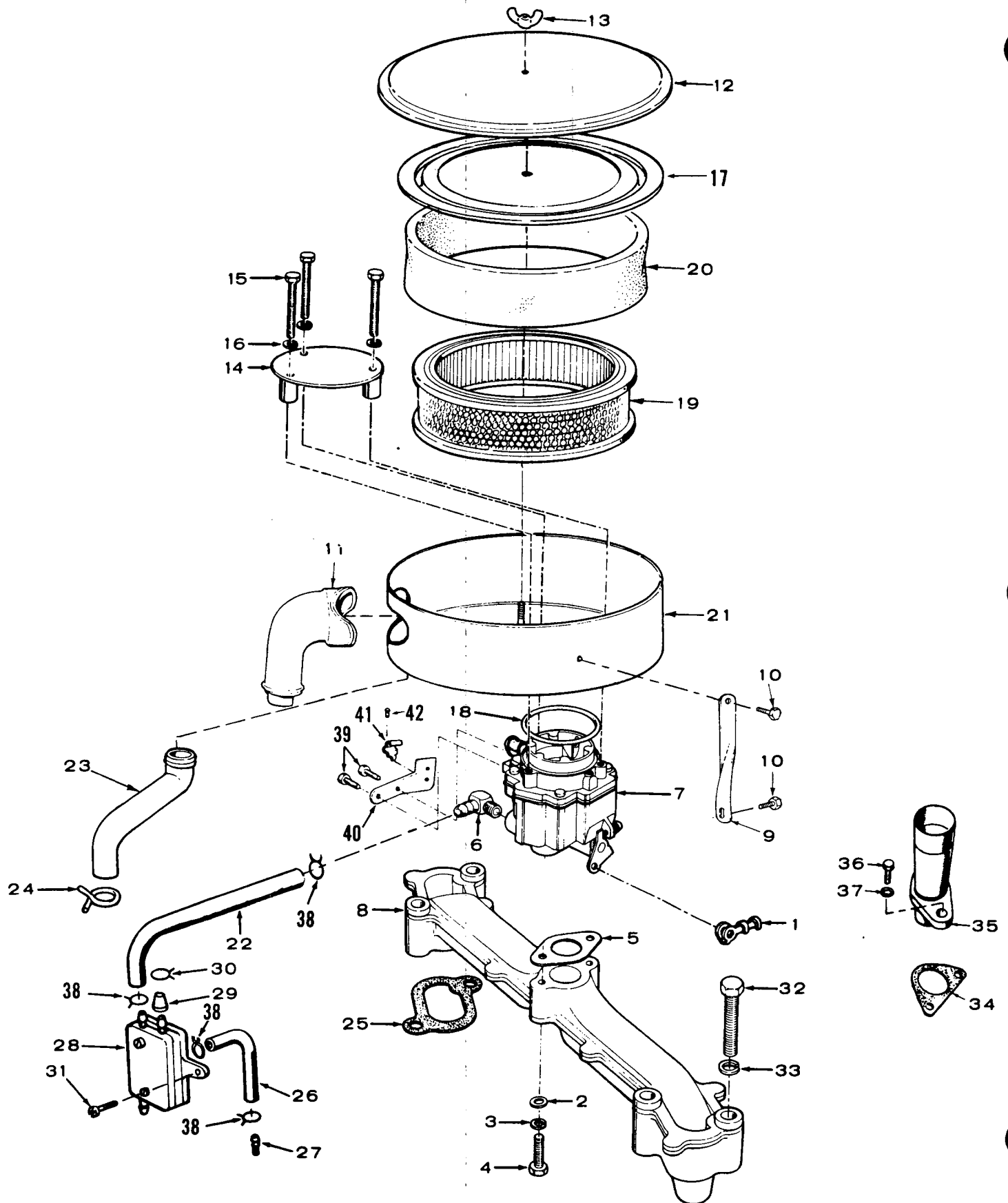
Fuel System, Air Cleaner and Exhaust - Spec A through C



Fuel System, Air Cleaner and Exhaust - Spec A through C

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	806-0009	2	Screw, Cap - Counterbore - Hex Head (1/4-20 x 1-1/4") - Key 1	26	850-0045	4	Washer, Lock - Spring (5/16")
2	502-0002	1	Elbow, Pipe - Key 1	27	154-1484	2	Adapter, Pipe - Exhaust
3	502-0313	1	Elbow, Hose - Key 1	28	140-1175	1	Filter, Cleaner - Air - Disposable
4	149-1791	1	Pump, Fuel Mechanical (See Separate Page for Components) - Key 1	29	140-1185	1	Gasket, Cleaner - Air
	149-1982	1	Pulse Pump - Key 2	30	503-0170	1	Clamp, Hose Top
5	149-0003	2	Gasket		503-0171	1	Bottom
6	149-0045	1	Spacer, Mounting - Fuel Pump - Key 1	31	503-0582	1	Hose, Breather - Key 1
7	149-1228	1	Hose, Fuel - Key 1	32	503-0365	1	Clamp, Loop - Key 1
8	502-0313	1	Elbow, Hose	33	503-0004	1	Clamp, Loop - Key 1
9	868-0002	2	Nut, Hex - Jam (5/16-24)	34	140-1186	1	Elbow, Inlet - Carburetor - Key 1
10	854-0017	2	Washer, Lock - Internal Tooth (5/16")	35	815-0261	1	Screw, Tapping - Hex Washer Head (1/4-20 x 7/16") - Key 1
11	141-0895	1	Carburetor, Gasoline - Manual Choke (See Separate Page for Components)	36	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2") - Key 1
12	141-0281	1	Gasket Spec A and B	37	526-0015	2	Washer, Flat (1/4" Screw) - Key 1
	141-0281	2	Spec C Only	38	140-1179	1	Panel, Cleaner - Air - Standard - Key 1
13	520-0526	2	Stud Spec A and B	39	815-0199	3	Screw, Machine - Fillister Head (#10-32 x 5/16")
	520-0857	2	Spec C Only	40	850-0030	3	Washer, Lock - Spring (#10)
14	800-0538	4	Screw, Cap - Hex Head (3/8-16 x 1-1/2")	41	145-0398	1	Adapter, Inlet - Carburetor - Key 1
15	850-0050	4	Washer, Lock - Spring (3/8")	42	140-1087	1	Gasket, Inlet - Carburetor Spec C Only
16	154-1466	1	Manifold, Intake Spec A and B		140-0921	1	Spec A and B
	154-1773	1	Spec C Only	43	123-1241	1	Tube, Breather - Key 2
17	154-1528	2	Gasket, Intake - Exhaust Manifold	44	503-0274	1	Clamp, Loop
18	800-0004	2	Screw, Cap - Hex Head (1/4-20 x 5/8") - Key 2	45	503-1142	1	Clamp, Loop - Key 2
19	526-0063	2	Washer, Flat - Copper (1/4" Screw) - Key 2	46	140-1282	1	Elbow, Inlet - Carburetor - Key 2
20	149-0136	1	Plate, Cover (Fuel Pump Opening) - Key 2	47	145-0453	1	Adapter, Inlet - Carburetor - Key 2
21	155-1217	2	Muffler, Exhaust	48	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
22	805-0019	2	Bolt, Hex Head - Grade 8 (3/8-16 x 1-7/16")	49	870-0106	1	Nut, Speed - Key 2, Spec A Only
23	862-0003	2	Nut, Hex (3/8-16)	50	140-1280	1	Adapter and Bracket, Air Inlet - Key 2
24	155-1219	2	Clamp, Pipe - Exhaust	51	98-2418	1	Decal, Label - Control Panel - Key 1
25	800-0512	4	Screw, Cap - Hex Head (5/16-18 x 1")				

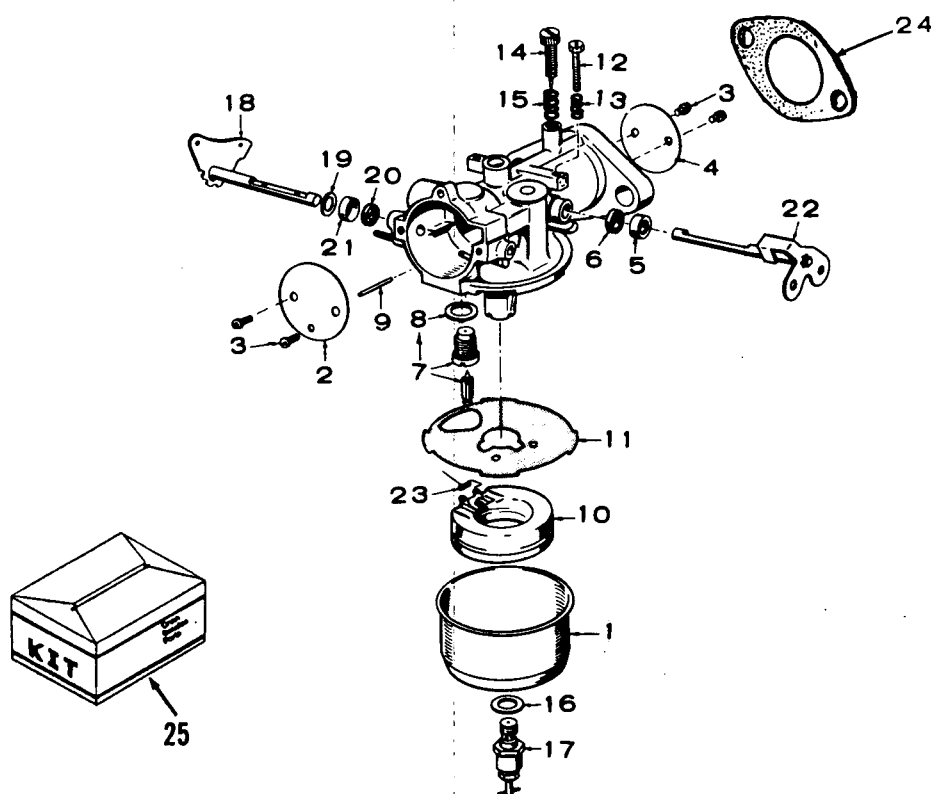
Fuel System, Air Cleaner and Exhaust - Begin Spec D



Fuel System, Air Cleaner and Exhaust - Begin Spec D

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	518-0004	1	Clip, Rod - Governor	19	140-1228	1	Element, Cleaner - Air
2	526-0115	2	Washer, Flat (5/16" Screw)	20	140-1496	1	Wrapper, Element - Air Cleaner
3	850-0045	2	Washer, Lock - Spring (5/16")	21			Housing, Cleaner - Air
4	800-0035	2	Screw, Cap - Hex Head (5/16-18 x 2-1/2")		140-1498	1	Key 1 - Spec D
					140-1498	1	Key 2 - Spec D
5	154-0733	1	Gasket, Mounting - Carburetor		140-1498	1	Spec E (#10-32 x 1/2")
6	502-0313	1	Elbow, Hose (90") Spec D Only	22	503-1199	1	Hose, Fuel
7			Carburetor, Gasoline (Includes Mounting Gasket) (See Separate Page for Components)	23	123-1264	1	Tube, Breather
	146-0497	1	Nikki (Replaces Walbro 146-0312)	24	503-0171	1	Clamp, Hose
	146-0497	1	Nikki - Key 1 (Replaces 146-0431)	25	154-2219	2	Gasket, Manifold - Intake
	146-0495	1	Nikki - Spec E - Key 2 (Replaces 146-0428)	26	503-0707	1	Line, Vacuum - Fuel Pump
8	154-2293	1	Manifold, Intake	27	502-0395	1	Connector, Hose
9			Support, Cleaner - Air	28	149-1982	1	Pump, Fuel (Includes Cap and Clamp)
	140-1499	1	Key 1	29	149-1321	1	Cap, Fitting - Fuel
	140-1697	1	Key 2	30	503-0301	1	Clamp, Hose (7/16")
10	821-0009	2	Screw, Cap - Hex Washer Head (1/4-20 x 3/8")	31	815-0555	2	Screw, Tapping - Pan Head (#10-24 x 5/8")
11	140-1495	1	Tube, Inlet - Air	32	800-0538	4	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
12	140-1494	1	Cover, Cleaner - Air	33	850-0050	4	Washer, Lock - Spring (3/8")
13	865-0020	1	Nut, Wing (1/4-20)	34	154-1482	2	Gasket, Exhaust
14	145-0522	1	Plate, Deflector - Air	35	154-1484	2	Adapter, Exhaust
15	815-0470	3	Screw, Machine - Hex Head (#10-32 x 1-1/2")	36	800-0512	4	Screw, Cap - Hex Head (5/16-18 x 1")
16			Washer	37	850-0045	4	Washer, Lock - Spring (5/16")
	850-0030	3	Lock, Spring (#10) (Use w/2 Piece Air Deflector)	38	503-0731	4	Clamp, Wire (1/2")
	526-0008	3	Flat (#10) (Use w/1 Piece Air Deflector)	39	821-0002	2	Screw, Cap - Hex Washer Head (#10-32 x 1/4")
17	140-1692	1	Cover, Element - Optional	40	153-0515	1	Bracket, Cable - Choke
18	509-0145	1	O-Ring, Intake - Carburetor Air	41	153-0514	1	Clamp, Cable - Choke
				42	815-0391	1	Screw, Hex Washer Head - Tapping (#10-32 x 1/2")

Carburetor Components - Spec A Through C

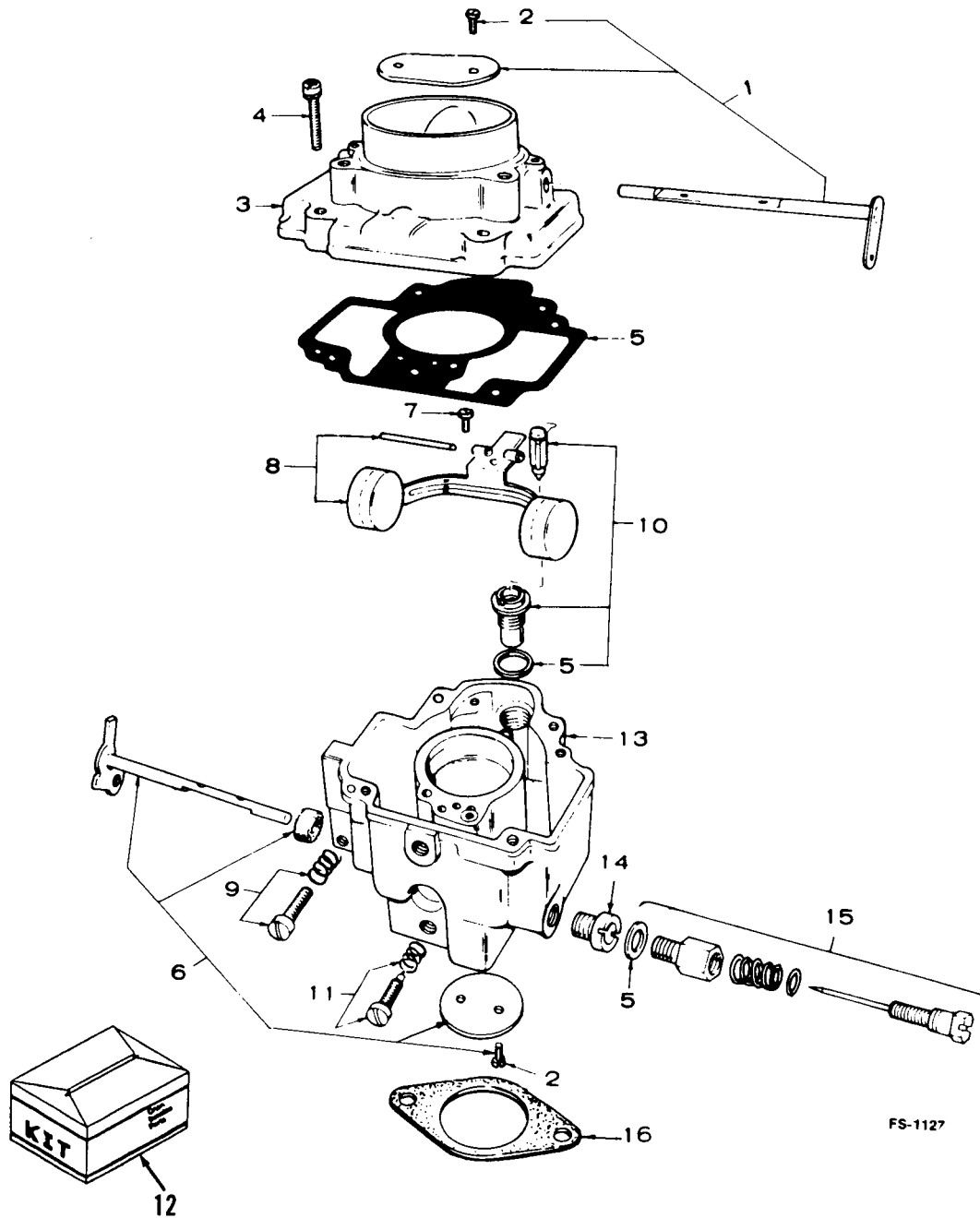


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	141-0895	1	Carburetor, Gasoline - Complete - Manual Choke (Includes Mounting Gasket)
1	141-0708	1	Bowl, Fuel
2	141-0741	1	Plate, Choke
3	141-0698	4	Screw, Round Head with Washer
4	141-0813	1	Plate, Throttle
5	141-0705	1	*Retainer, Seal
6	141-0661	1	*†Seal, Rubber
7	141-0830	1	*Seal Assembly, Valve
8	141-0811	1	†Washer, Valve Seat
9	141-0703	1	*Shaft, Float Pivot
10	141-0702	1	Float, Carburetor
11	141-0701	1	*†Gasket, Bowl
12	141-0700	1	Screw, Throttle Stop
13	141-0711	1	Spring, Throttle Stop
14	141-0713	1	*Needle, Idle Adjusting
15	141-0710	1	Spring, Idle Adjusting Needle
16	141-0077	1	*†Washer, Main Jet
17	141-0712	1	Jet, Main (Adjustable)
18	141-0742	1	Shaft, Choke
19	141-0699	1	*Washer, Shaft
20	141-0697	1	*†Seal, Felt
21	141-0203	1	*Retainer, Seal
22	141-0709	1	Shaft, Throttle
23	141-0799	1	*Spring, Fuel Float
24	141-0281	1	*†Gasket, Carburetor Flange
25	KIT, CARBURETOR		
	141-0814	1	Repair (Includes Parts Marked *)
	141-0748	1	Gasket (Includes Parts Marked †)

* - Included in Repair Kit #141-0814.

† - Included in Gasket Kit #141-0748.

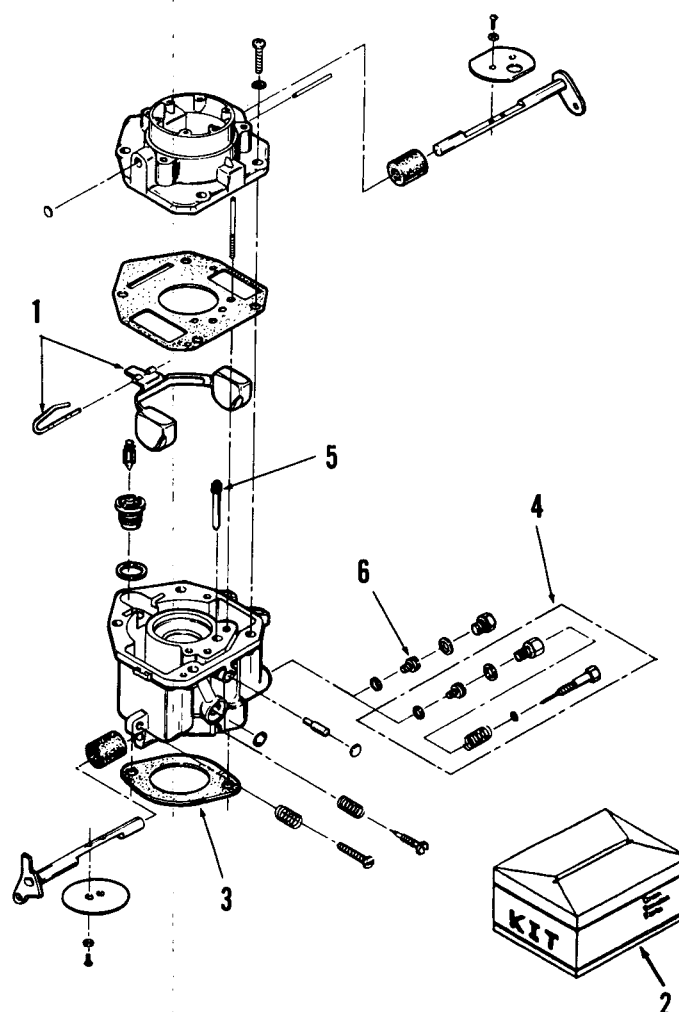
Carburetor Components - Spec D Walbro



FS-1127

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	146-0312	1	Carburetor, Gasoline - Complete (LUA 9, 15/16" Venturi) (Includes Mounting Gasket)	8	146-0262	1	Float Package
1	146-0260	1	Choke Shaft Package	9	146-0261	1	Idle Speed Adjusting Screw Package
2	146-0142	4	Screw, Valve Mounting	10	146-0289	1	Valve and Seat Package
3		1	Intake, Air (Not Sold Separately)	11	146-0209	1	Idle Needle Package
4	146-0247	4	Screw, Body To Intake	12	146-0292	1	Kit, Repair
5	146-0220	1	Kit, Gasket	13		1	Body (Not Sold Separately)
6	146-0270	1	Throttle, Shaft Package	14	146-0238	1	Jet, Power
7	146-0222	1	Screw, Lever Pin	15	146-0282	1	Power Needle Package
				16	154-0733	1	Gasket, Carburetor Mounting

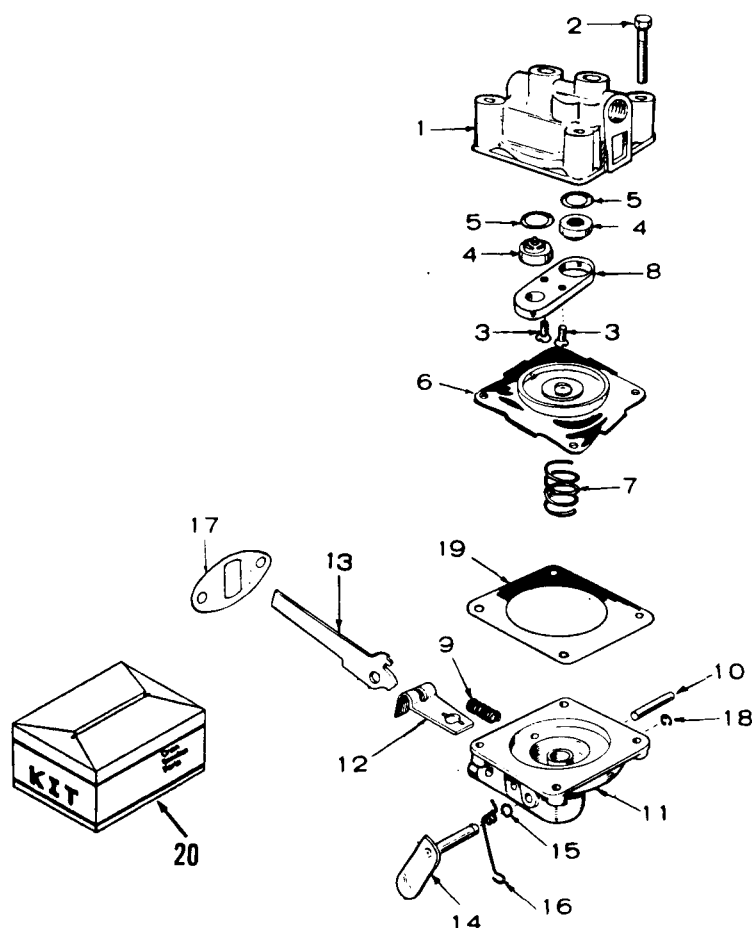
Carburetor Components - Begin Spec E Nikki



FS-1440

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Carburetor, Gasoline - Complete - Semi-Automatic Choke (Includes Mounting Gasket)	3	154-0733	1	Gasket, Mounting - Carburetor
	146-0428	1	Key 2	4	146-0334	1	Fixed Jet Kit - Optional (High Altitude Application) (Includes Power Jet and Gasket, Retainer, Power Needle Spring, Power Needle and Power Plug Gasket)
	146-0431	1	Key 1				Jet, Idle
1	146-0437	1	Float Package (Includes Float, Pin and Valve)	5	146-0425	1	Key 2
2	146-0432	1	Kit, Repair (Includes Screw and Plug Package, Gasket Package, Float Valve, Idle Adjust Needle and Spring, Mounting Gaskets, Idle Limit Cap)		146-0426	1	Key 1
				6	146-0396	1	Jet, Power
					146-0424	1	Key 2
							Key 1

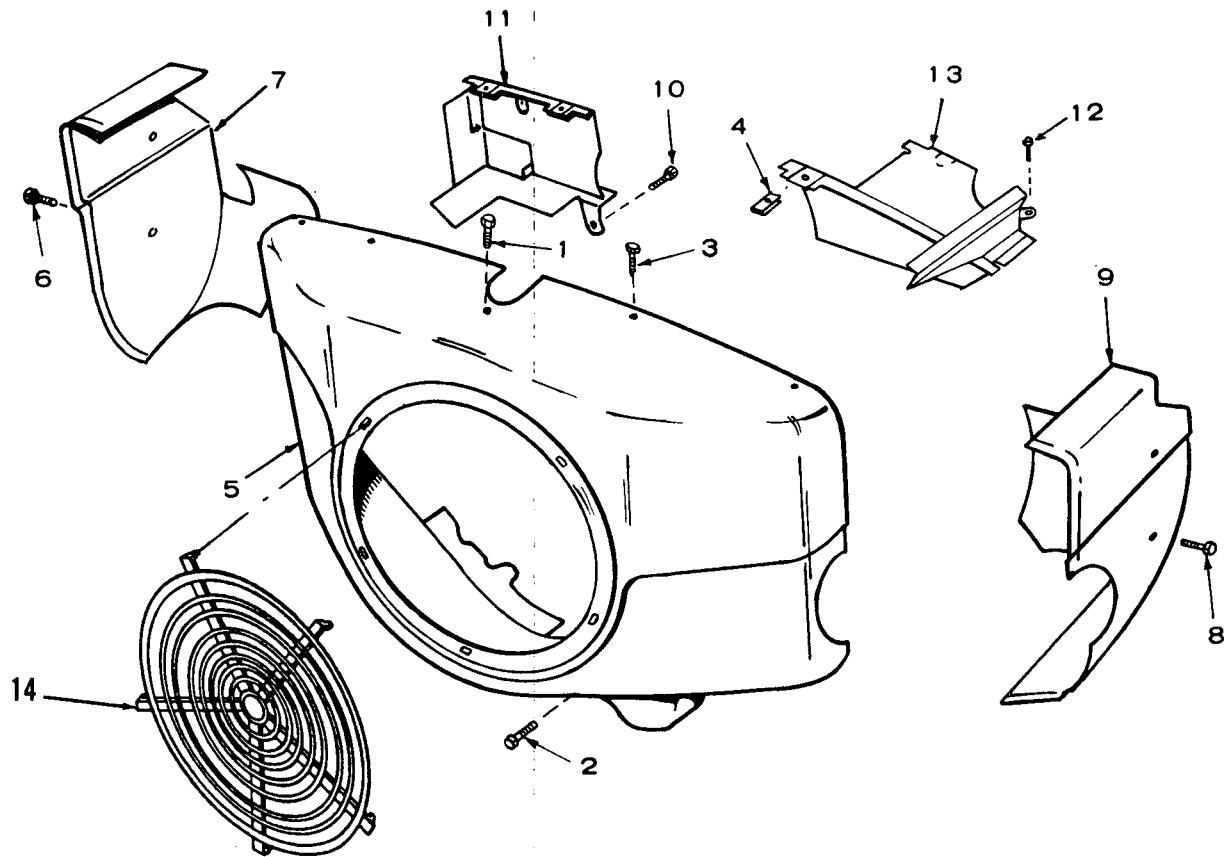
Fuel Pump Components - Spec A Through C Key 1



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	149-1791	1	Pump, Fuel (Includes Mounting Gasket)
1		1	Body, Top - Fuel Pump (Not Sold Separately)
2	815-0148	4	Screw, Machine - Hex Head, Chromate Dip, Zinc Plated, Heat Treated (#8-32 x 7/8")
3	815-0147	2	Screw, Tapping - Oval Head, Cross Recessed (#6-32 x 7/8")
4	149-0096	2	*Valve, Check
5	149-0095	2	*Gasket, Valve
6	149-0582	1	*Diaphragm, Fuel Pump
7	149-0672	1	*Spring, Diaphragm
8	149-0539	1	Retainer, Check Valve
9	149-0675	1	Spring, Pump Arm
10	516-0113	1	Pin, Rocker Arm
11		1	Body, Lower - Fuel Pump (Not Sold Separately)
12	149-0670	1	Link, Rocker Arm
13	149-1148	1	Arm, Rocker
14	149-1042	1	Lever, Prime
15	509-0065	2	Seal, O-Ring
16	149-1044	1	Spring, Prime Lever
17	149-0003	1	*Gasket, Pump Mount
18	518-0129	1	Ring, Retaining - Prime Lever
19	149-0858	1	*Gasket, Diaphragm - Optional - (Prevents Air Lock)
20	149-0526	1	Kit, Repair (Includes Parts Marked *)

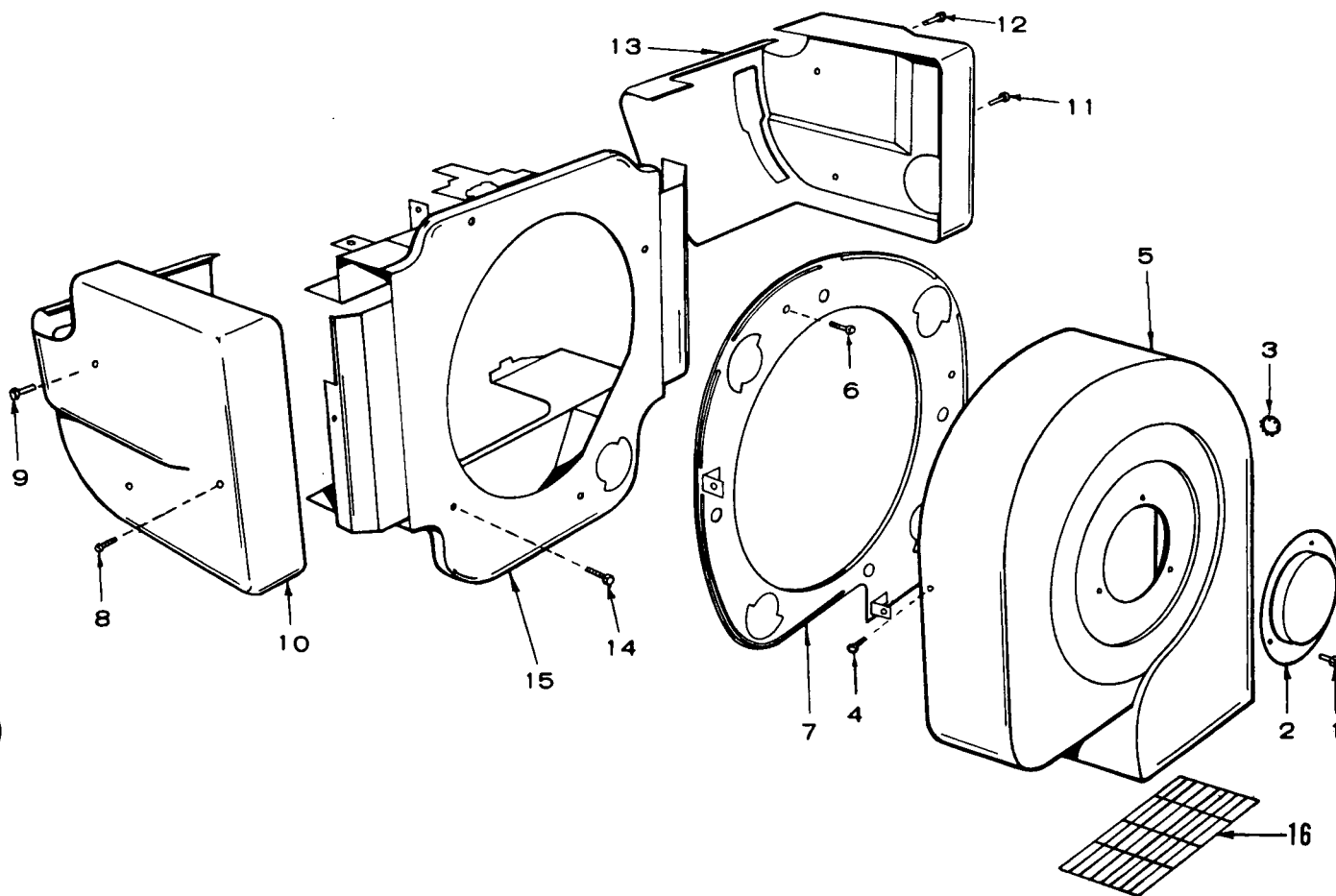
* - Included in Repair Kit #149-0526.

Air Housing - Key 1 (Pressure Flow Cooling)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	815-0261	1	Screw, Tapping - Hex Washer Head (1/4-20 x 1/2")	8	821-0016	2	Screw, Hex Washer Head - Self-locking (5/16-18 x 3/4")
2	821-0010	2	Screw, Cap - Hex Washer Head (1/4-20 x 1/2")	9			Housing, Air - Right Side
3	815-0474	4	Screw, Tapping - Hex Washer Head (1/4-20 x 1/2")		134-2488	1	Spec A
4	870-0107	4	Nut, Speed (#14)		134-2799	1	Spec B
5			Housing, Blower		134-3282	1	Spec C
	134-2494	1	Spec A		134-3579	1	Begin Spec D
	134-2811	1	Spec B	10	815-0370	2	Screw, Tapping - Hex Head (1/4-20 x 1/2")
	134-4083	1	Spec C	11			Support, Housing - Left Side
	134-3914	1	Begin Spec D		134-2487	1	Spec A through C
6	815-0261	2	Screw, Tapping - Hex Washer Head (1/4-20 x 1/2")		134-2646	1	Begin Spec D
7			Housing, Air - Left Side	12	815-0320	2	Screw, Tapping - Pan Head (1/4-20 x 1-1/4")
	134-2489	1	Spec A and B	13			Support, Housing - Right Side
	134-3010	1	Spec C		134-2483	1	Spec A and B
	134-3580	1	Begin Spec D		134-3224	1	Begin Spec C
				14	134-2447	1	Grille, Housing - Blower

Air Housing - Key 2 (Vacu-Flo Cooling)



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	821-0009	3	Screw, Self-locking - Hex Washer Head (1/4-20 x 3/8")
2	134-3119	1	Cover, Scroll - PTO Hole
3	517-0021	1	Plug, Button
4	821-0010	5	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
5	SCROLL, AIR 134-2761	1	Prior to 6/83 Includes Built-In Guard Screen
	134-2749	1	Begin 6/83 w/o Guard
6	821-0010	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
7	134-2747	1	Backplate, Scroll
8	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
9	815-0261	2	Screw, Tapping - Hex Washer Head (1/4-20 x 1/2")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
10	HOUSING, AIR - LEFT SIDE 134-2755	1	Spec A-C
	134-3617	1	Begin Spec D
11	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
12	815-0261	2	Screw, Tapping - Hex Washer Head (1/4-20 x 1/2")
13	HOUSING, AIR - RIGHT SIDE 134-2752	1	Spec A-C
	134-3618	1	Begin Spec D
14	821-0010	4	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
15	HOUSING, BLOWER 134-3421	1	Begin Spec C
	134-2737	1	Spec A & B
16	GUARD 134-3418	1	Screen - Prior to 6/83
	134-4316	1	Wire - Begin 6/83

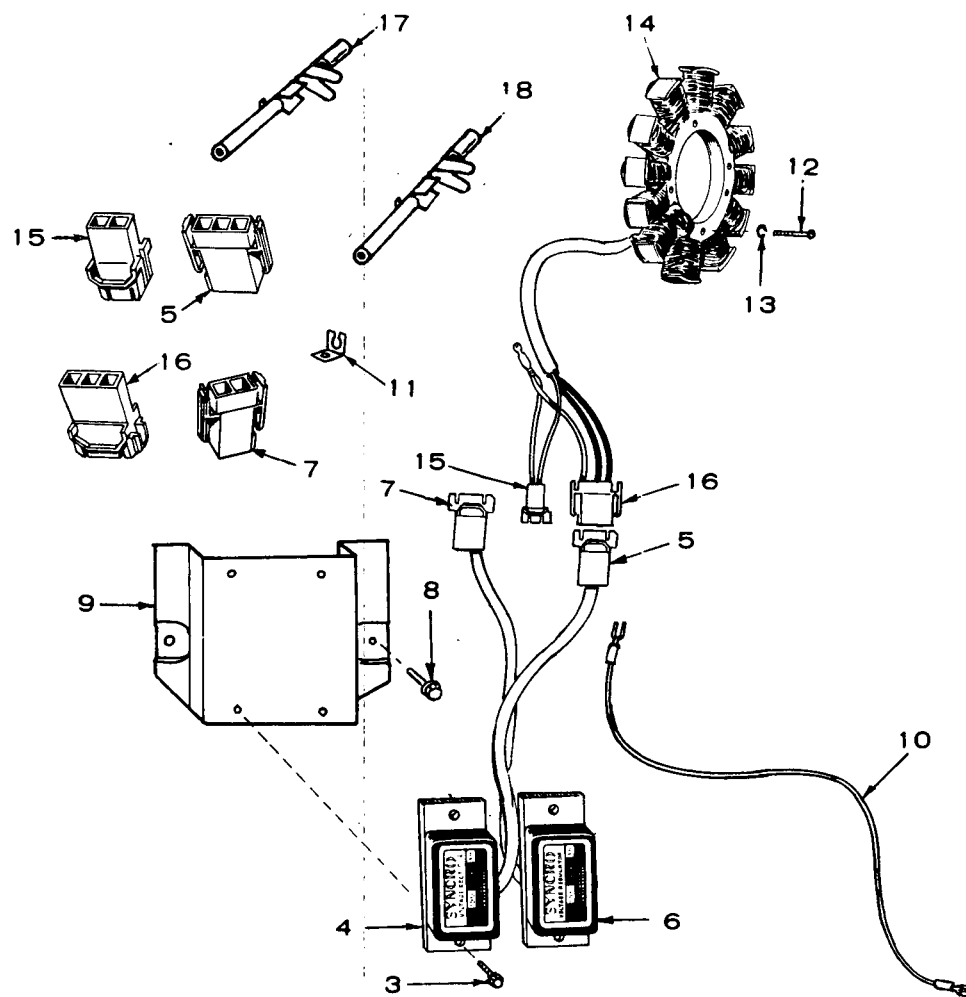
Labels, Paint, Thread Sealant and Gasket Kits

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	525-0137	1	Paint, Touch-Up (Metallic Green) (16 oz. Pressurized Can)	110-2987	2	#+Gasket, Head - Cylinder	
	525-0305	1	Paint, Touch-Up (Non-Metallic Green) (13 oz. Pressurized Can)	120-0161	1	#+Kit, Gasket - Oil Pump	
	525-0454	1	Paint, Touch-Up - Enamel (Greige) 13 oz. Pressurized Can	122-0774	1	#+Gasket, Oil Filter Adapter to Block	
	98-2629	1	Kit, Decal	509-0142	1	+Seal, O-Ring - Oil Fill Cap	
	518-0452	1	Sealant, Thread (50cc Bottle)	509-0145	1	+Seal, O-Ring - Air Cleaner	
	518-0347	1	Loctite, Bottle (250cc)	509-0124	1	#Seal, O-Ring - Air Cleaner (1-7/16" Diameter)	
	168-0122	1	Kit, Gasket - Engine Complete (Includes Parts Marked #)	154-0733	1	+Gasket, Flange - Carburetor	
	168-0121	1	Kit, Gasket - Carbon Removal (Includes Parts Marked *)	141-0078	1	#Gasket, Flange - Carburetor	
	168-0158	1	Kit, Gasket - Carbon Removal (Includes Parts Marked *)	160-1368	1	#+Gasket, Box - Breaker	
	110-2987	2	**Gasket, Cylinder	160-1148	1	#Gasket, Cover - Breaker Box	
	154-2219	2#	**Gasket, Manifold - Intake	509-0008	1	#+Seal, Shaft - Governor	
	154-2747	2#	**Gasket, Adapter - Exhaust	509-0040	1	#+Seal, Oil - Gear Cover	
	110-3604	2	**Seal, Oil (Valve)	509-0041	1	#+Seal, Oil - Bearing Plate	
	110-0068	2	**Gasket, Guide - Valve (Intake)	509-0117	1	#+Seal, O-Ring - Breather Cap	
	168-0157	1	Kit, Gasket - Engine Complete (Includes Parts Marked +)	145-0438	1	#+Gasket, Carburetor	
	101-0782	1	#+Gasket, Plate - Bearing (1/64")	141-0950	1	#Gasket, Carburetor	
	102-1398	1	+Gasket, Base - Oil	102-0743	1	+Gasket, Drain - Oil	
	103-0810	1	#+Gasket, Cover - Gear	149-0003	1	#+Gasket, Pump - Fuel	
	110-3136	2	#+Gasket, Guide - Valve	102-1409	1	#Gasket, Base - Oil	
	110-3575	3#	**+Gasket, Cover - Valve Box	123-0191	1	#Gasket, Cap - Oil	
				140-0921	1	#Gasket, Air Horn - Carburetor	
				140-1185	1	#Gasket, Cleaner - Air	
							* - Parts Included in 168-0158 Gasket Kit.
							+ - Parts Included in 168-0157 Gasket Kit.
							* - Parts Included in 168-0121 Gasket Kit.
							# - Parts Included in 168-0122 Gasket Kit.

OPTIONAL EQUIPMENT PARTS SECTION

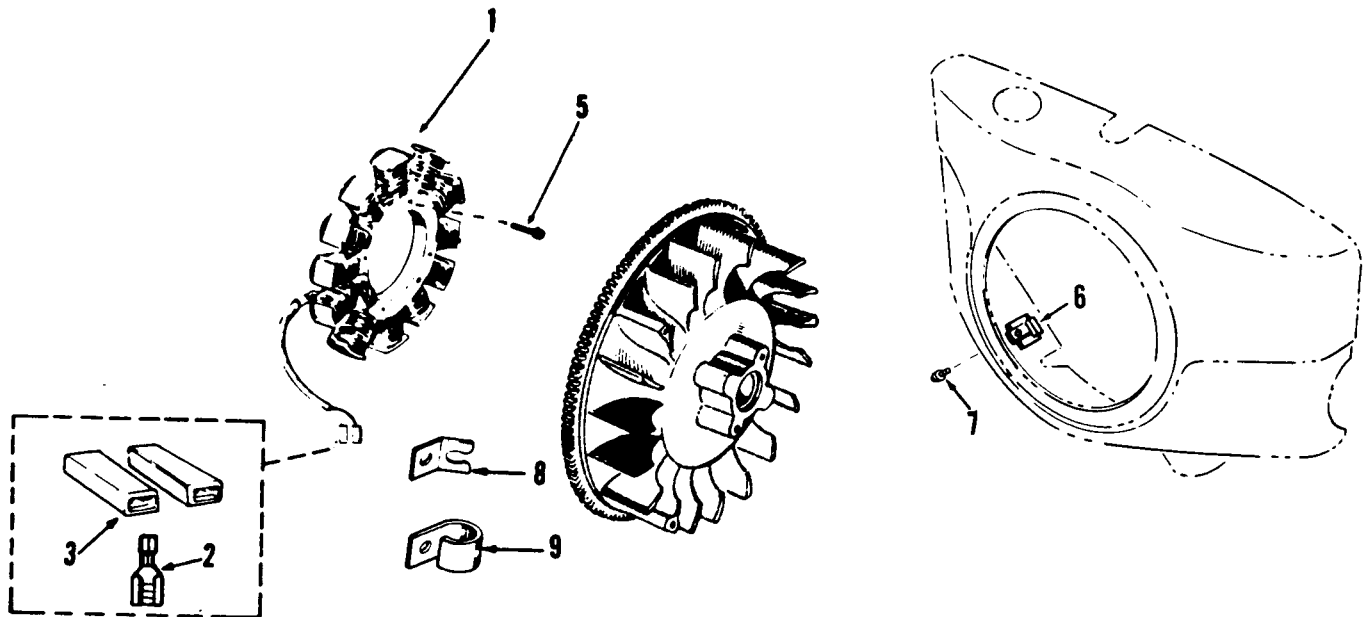
This section contains illustrated parts listing of factory installed options for these Industrial Engines. NOTE: Options may not be applicable to all models; for field conversions, additional parts are usually required.

Option No. 1
Flywheel Alternator - 20 Ampere (Synchro)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
3	815-0181	4	Screw, Cap - Hex Head with External Tooth Lockwasher (#10-32 x 5/16")	10	336-2192	1	Lead, Electrical - Regulator to Terminal Block
4	191-0938	1	Rectifier, Current (Includes a Connector Plug and 3 Female Contacts)	11	167-0188	1	Clip, Cable
5	323-0882	1	Plug, Connector	12	813-0108	3	Screw, Machine - Round Head, Cross Recessed (#10-32 x 1-1/4")
6	191-0939	1	Regulator, Voltage (Includes a Connector Plug and 2 Female Contacts)	13	850-0030	3	Washer, Lock - Spring (#10)
7	323-0880	1	Plug, Connector	14	191-0937	1	Stator, Alternator (Includes 2 Connectors and 5 Male Contacts)
8	821-0010	2	Screw, Self-locking - Hex Head (1/4-20 x 1/2")	15	323-0879	1	Cap, Connector
9	191-1107	1	Bracket, Mounting - Rectifier and Regulator	16	323-0881	1	Cap, Connector
				17	323-0488	5	Contact, Connecting - Female
				18	323-0496	5	Contact, Connecting - Male

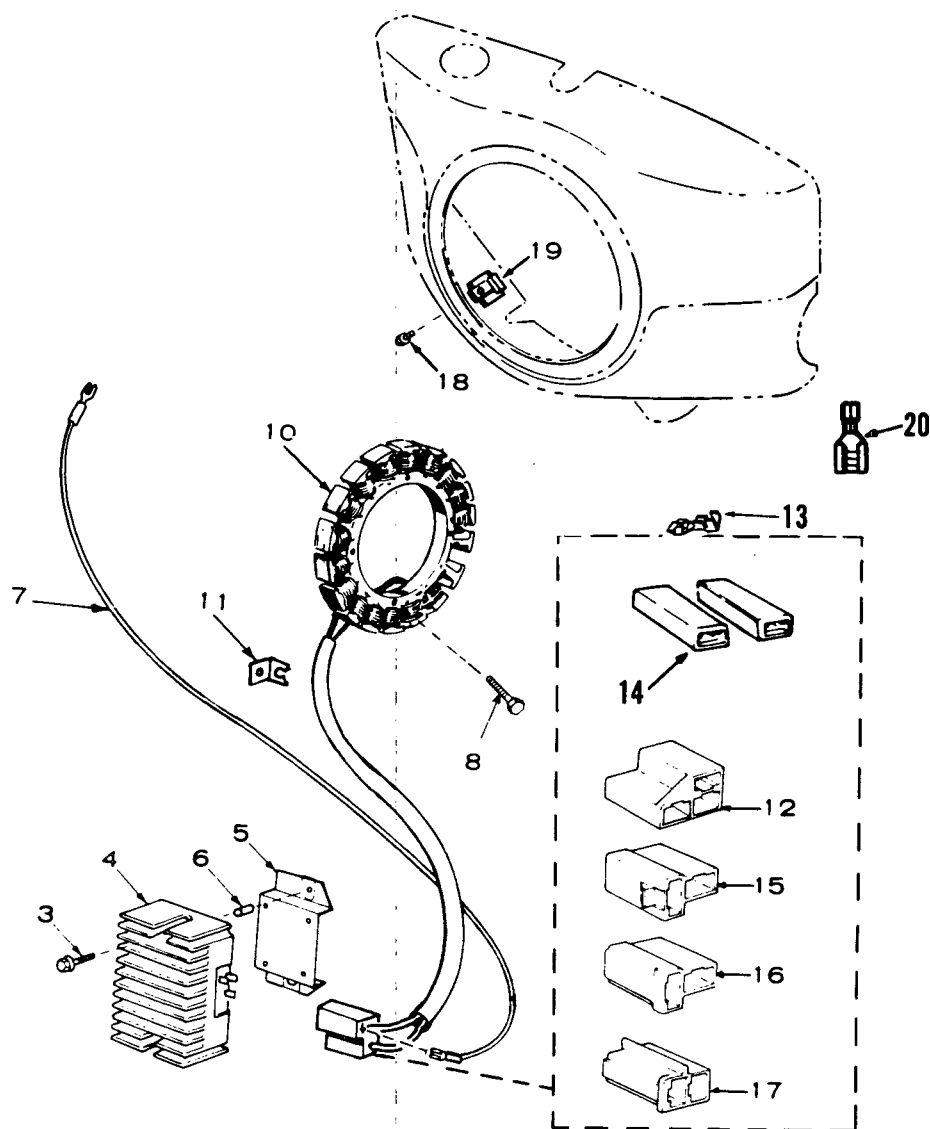
Option 1A
Flywheel Alternator - 20 Ampere (Phelon)



ES-1353-1

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	191-1276	1	Stator (Includes Terminals and Connector Bodies)	6	191-1748	1	Regulator, Voltage
2	332-2423	3	Terminal, Leads - Stator	7	821-0008	1	Screw, Cap - Lock Head (1/4-20 x 5/16")
3	323-1257	2	Body, Connector - Terminal - Kit (Includes Terminals)	8	167-0188	1	Clip, Cable
5	815-0470	3	Screw, Machine - Hex Head - Self-lock (#10-32 x 1-1/2")	9	332-2319	1	Clamp, Wire - Alternator Leads

Option No. 2
Flywheel Alternator - 15 Ampere (Phelon)

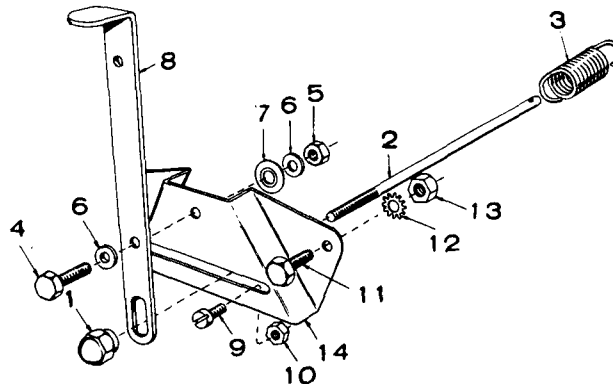


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
3	821-0012	2	Screw, Cap - Hex Washer Head (1/4-20 x 1-1/8")
4	191-0886	1	Regulator, Voltage - Spec A through C
5	191-1107	1	Bracket, Mounting - Regulator
6	134-2100	2	Spacer, Sleeve
7	336-2192	1	Lead, Electrical - Regulator to Terminal Block
8	815-0593	3	Screw, Machine - Hex Head, Self-lock (#10-32 x 1-3/8")
10	191-1256	1	Stator, Alternator (Includes Parts Marked *)
11	167-0188	1	Clip, Lead - Alternator

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
12	323-0853	1	*Body, Connector
13	332-2073	3	Terminal, Wire
14	323-1257	3	*Body, Kit - Terminal Connector (Includes Terminals)
15	323-1085	1	*Body, Connector - Terminal
16	323-0892	1	*Body, Connector - Terminal
17	323-0890	1	*Body, Connector - Terminal
18	821-0010	1	Screw, Cap - Hex Washer Head (1/4-20 x 1/2")
19	191-1748	1	Regulator, Voltage - Begin Spec D
20	332-2423	3	Terminal, Leads - Stator

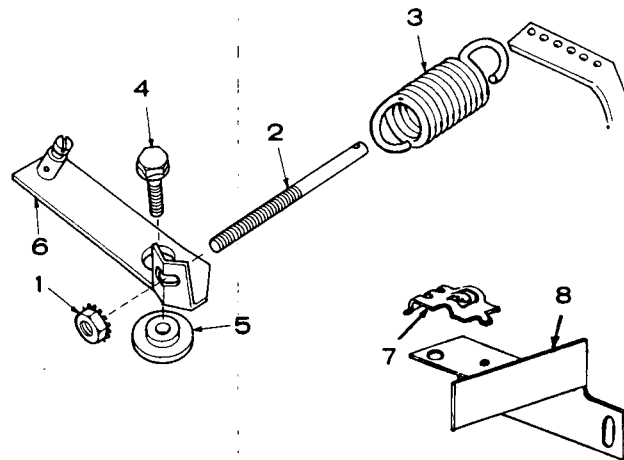
* - Included in 191-1256 Stator.

Option No. 3
Governor Control (Variable Speed) - Key 1



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	150-0621	1	Nut, Acorn	10	870-0131	2	Nut, Hex with External Tooth Lockwasher (#10-32)
2	152-0090	1	Stud, Adjustment - Speed	11	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
3	150-0098	1	Spring	12	853-0013	2	Washer, Lock - External Tooth (1/4")
4	800-0005	1	Screw, Cap - Hex Head (1/4-20 x 3/4")	13	862-0001	2	Nut, Hex (1/4-20)
5	870-0065	1	Nut, Hex (1/4-20)	14	152-0190	1	Bracket, Control - Speed
6	526-0016	2	Washer, Flat (1/4" Screw)				
7	152-0041	1	Washer, Tension - Spring				
8	152-0198	1	Arm, Control				
9	815-0199	2	Screw, Machine - Fillister Head (#10-32 x 5/16")				

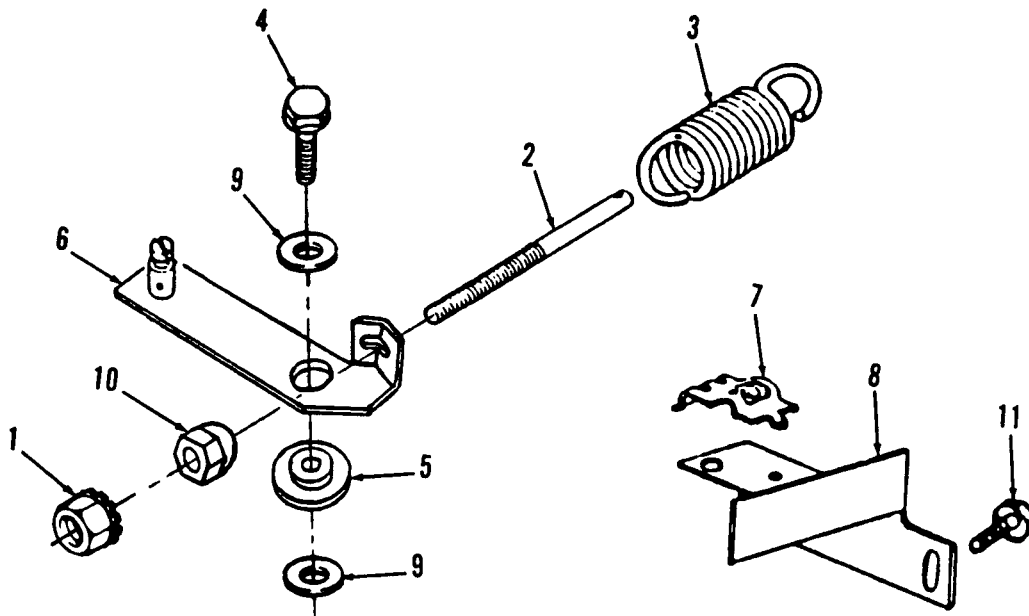
Option No. 4
Governor Control (Variable Speed)
(Remote) - Key 1
Specs A-D



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	870-0131	1	Nut, Hex with External Tooth Lockwasher (#10-32)
2	150-0147	1	Stud, Adjustment - Speed
3	150-0098	1	Spring
4	821-0010	1	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")

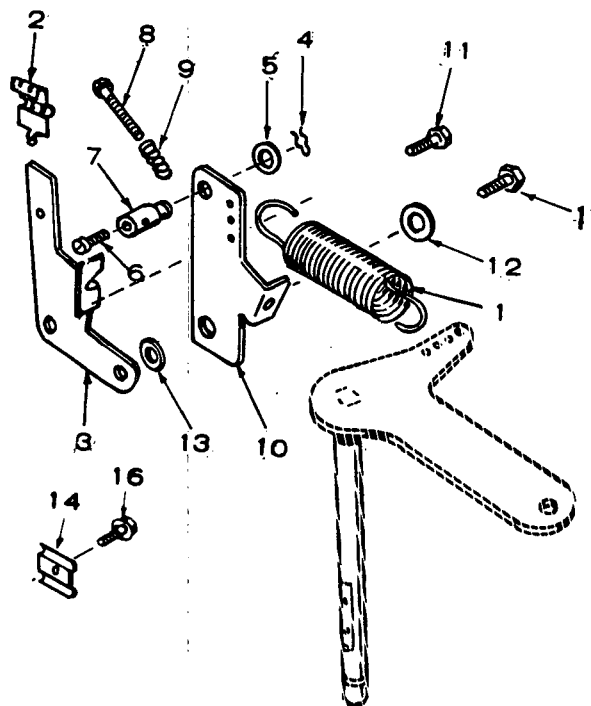
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5	152-0196	1	Spacer, Arm - Control
6	152-0195	1	Arm, Control
7	518-0176	1	Clip, Retaining - Cable
8	152-0192	1	Bracket, Cable - Throttle

Option No. 4A
Governor Control (Variable Speed)
(Remote) - Key 1
Spec E



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	870-0131	1	Nut, Hex with External Tooth Lockwasher (#10-32)	6	152-0195	1	Arm, Control
2	150-0147	1	Stud, Adjustment - Speed	7	518-0176	1	Clip, Retaining - Cable
3	150-0098	1	Spring	8	152-0192	1	Bracket, Cable - Throttle
4	815-0290	1	Screw, Hex Washer Head (1/4-20 x 5/8")	9	526-0021	2	Washer, Flat (1/4" Screw)
5	152-0196	1	Spacer, Arm - Control	10	150-0621	1	Nut, Acorn
				11	821-0010	1	Screw, Lock Head (1/4-20 x 1/2")

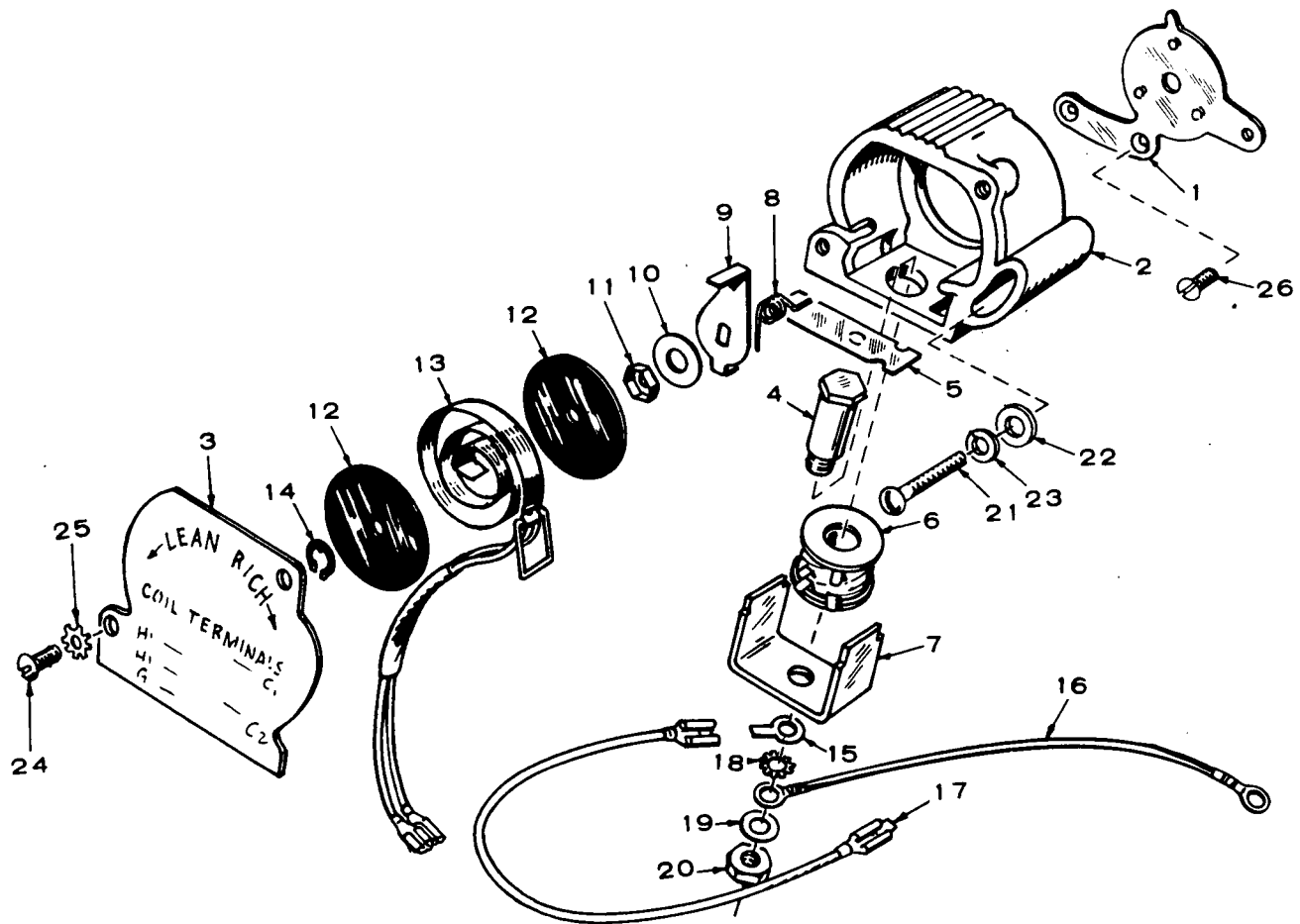
Option No. 5
Governor Control (Variable Speed)
(Side Pull)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	150-1214	1	Spring, Governor
2	518-0176	1	Clip, Cable - Spec A through C
3	150-1725-01	1	Bracket, Cable
4	516-0059	1	Pin, Cotter
5	526-0006	1	Washer, Flat (#12 Screw)
6	815-0104	1	Screw, Machine - Fillister Head (#8-32 x 5/16")
7	152-0155	1	Swivel, Holding - Cable
8	815-0510	1	Screw, Machine - Hex Washer Head, Slotted (#6-32 x .87")
9	150-1398	1	Spring, Setting - Idle

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
10			Arm, Control - Governor
	150-1345	1	Key 1
	150-1345	1	Key 2
11	815-0436	2	Screw, Self-locking - Hex (1/4-20 x 1/2")
12	526-0021	2	Washer, Flat (1/4" Screw)
13	150-1269	1	Bushing, Arm - Control
14	153-0514	1	Clamp, Cable - Begin Spec D
16	815-0391	1	Screw, Tapping - Hex Head (#10-32 x 1/2")

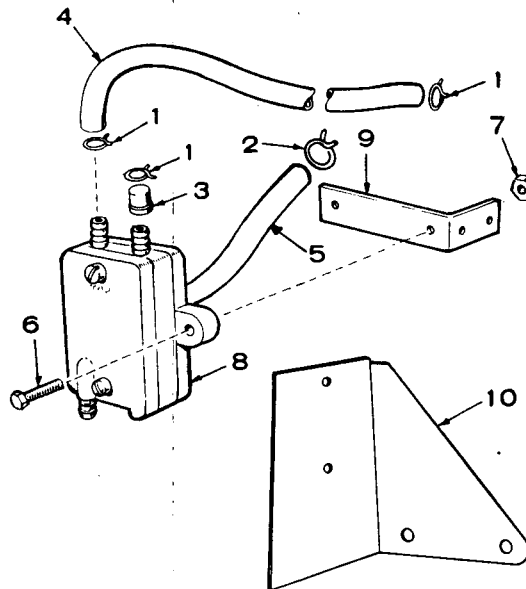
Option No. 6
Thermo-Magnetic Choke - Spec A through C



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	153-0385	1	Plate, Mounting
2	153-0386	1	Housing, Choke
3	153-0389	1	Cover, Choke
4	153-0391	1	Core, Solenoid
5	153-0395	1	Armature, Solenoid
6	307-1203	1	Coil, Solenoid
7	153-0392	1	Frame, Solenoid
8	153-0387	1	Spring, Armature
9	153-0390	1	Lever, Limit
10	526-0018	1	Washer, Flat
11	870-0134	1	Nut, Hex (1/4-20)
12	153-0399	2	Insulator, Disc
13	153-0400	1	Bimetal - Heater Assembly
14	518-0129	1	Ring, Retaining
15	332-0876	1	Terminal, Lug - Ground
16	334-0028	1	Lead, Electrical - Ground
17	334-0028	1	Lead, Electrical - Solenoid

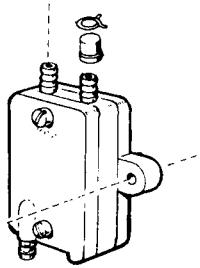
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
18	854-0017	1	Washer, Lock - Internal Tooth (5/16")
19	526-0022	1	Washer, Flat (5/16" Screw)
20	862-0015	1	Nut, Hex (5/16-18)
21	813-0107	1	Screw, Machine - Round Head (#10-32 x 1-1/4")
22	526-0008	1	Washer, Flat (#10 Screw)
23	850-0030	1	Washer, Lock - Spring (#10)
24	812-0076	2	Screw, Machine - Round Head (#8-32 x 5/16")
25	854-0007	2	Washer, Lock - Internal Tooth (#8)
26	815-0161	2	Screw, Machine - Round Head (#10-32 x 3/8")
	153-0429	1	Kit, Replacement (Includes Complete Choke, Less Electrical Leads, and Carburetor Air Horn Gaskets)

Option No. 7
Fuel Pump (Vacuum) - Spec A through C



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0301	6	Clamp, Loop	6	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
2	503-0731	1	Clamp, Loop	7	870-0183	2	Nut, Hex - With External Tooth Lockwasher (#6)
3	149-1321	1	Cap, Port - Inlet	8	149-1982	1	Pump, Fuel - Vacuum Pulse (Includes Cap and Clamp)
4	503-0780	1	Line, Flexible - Fuel (12-1/4") - Pump to Carburetor	9	149-1329	1	Bracket, Mounting - Key 1
5	503-1199	1	Line, Flexible - Vacuum (20-3/4") - Pump to Vacuum Port	10	149-1364	1	Bracket, Mounting - Key 2

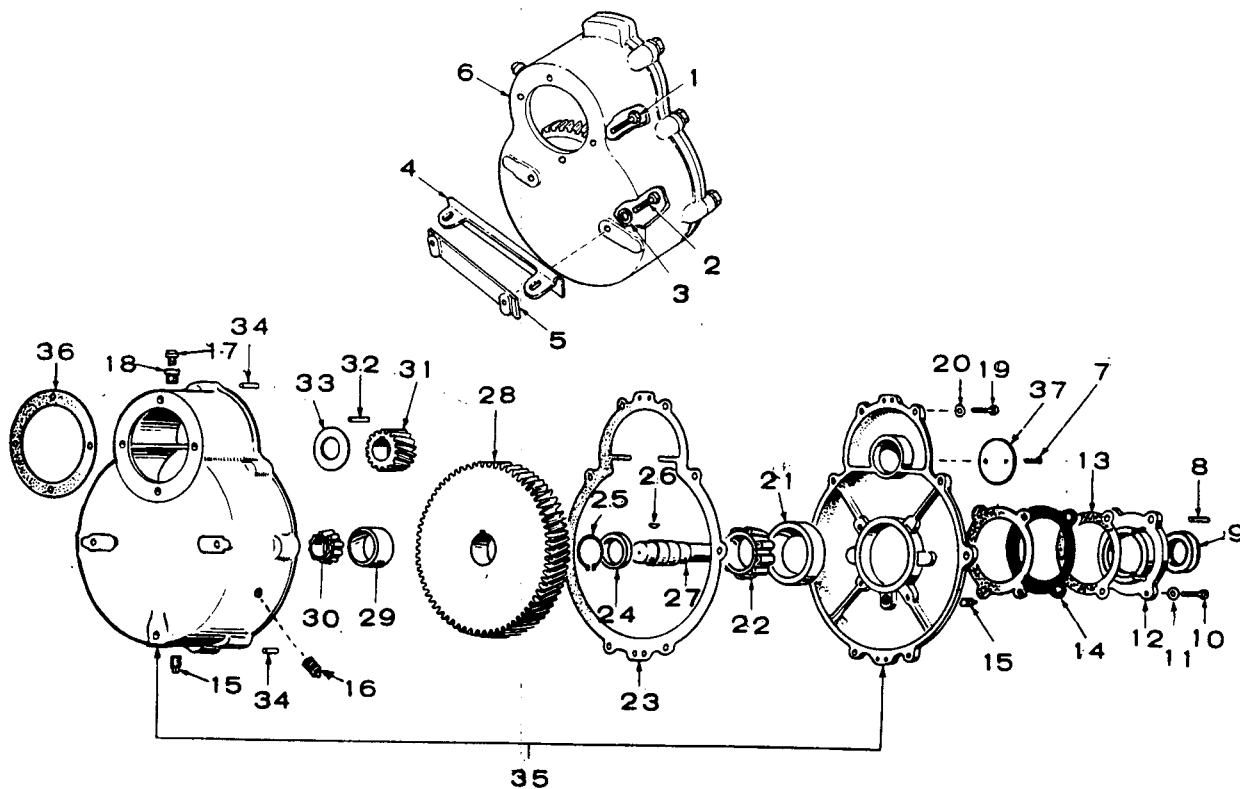
Option No. 8
Fuel Pump (Vacuum)



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	149-1982	1	Pump, Fuel (Includes Clamp and Cap)

(No Breakdown Parts Available)

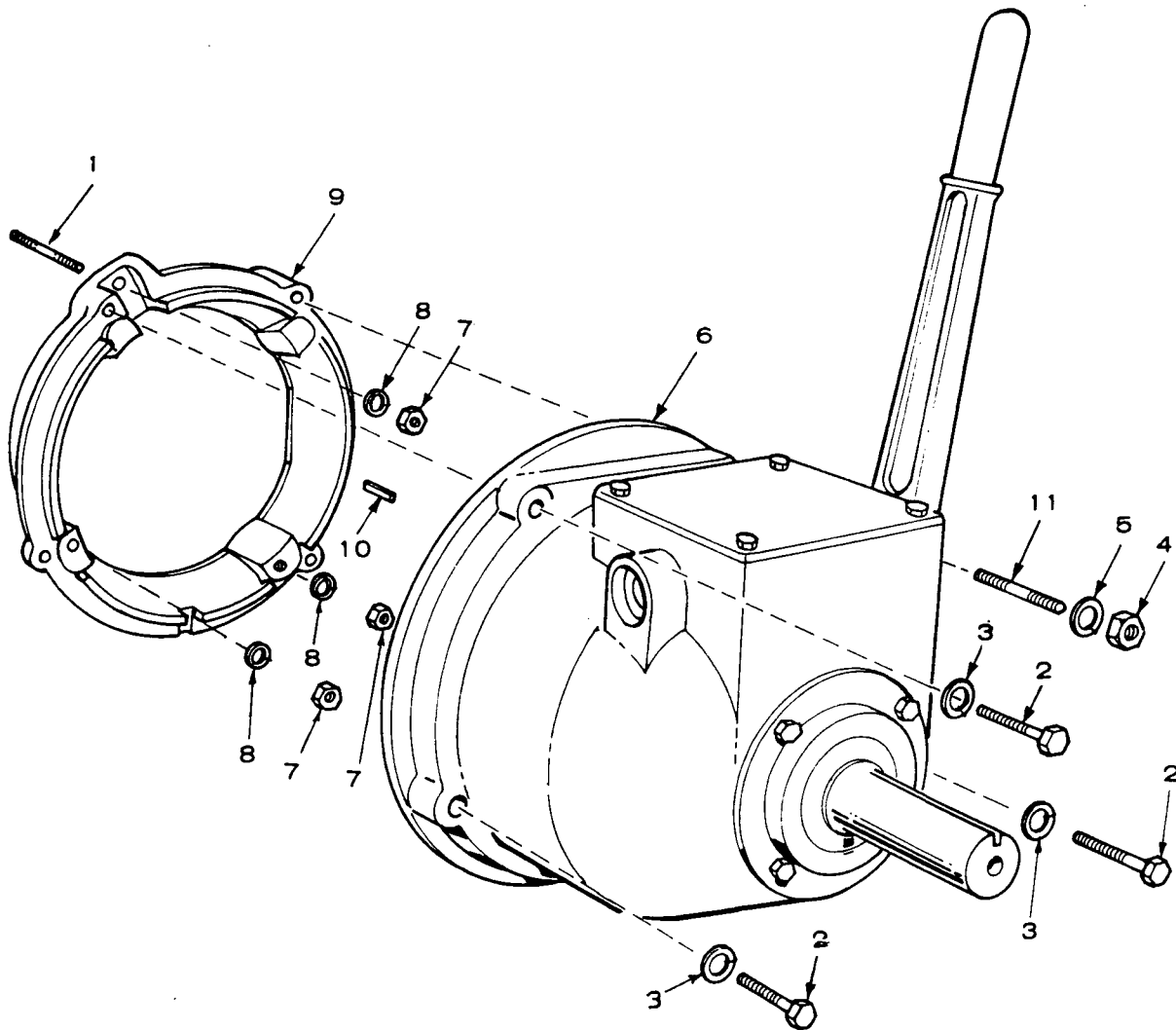
Option No. 9 Reduction Gearbox



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	805-0009	4	*+Bolt, Place - Hex Head (5/16-18 x 1")	21	510-0024	1	*+Race, Outer - Roller Bearing (Cup)
2	800-0027	2	*Screw, Cap - Hex Head (5/16-18 x 7/8")	22	510-0023	1	*+Race, Inner with Rollers (Cone)
3	526-0065	2	*Washer, Flat - Copper (5/16" Screw)	23	190-0021	1	*+Gasket
4	190-0297	1	*Bracket, Support - Housing	24	190-0202	1	*+Spacer, Bearing
5	190-0298	1	*Nut, Bar - Support Bracket	25	518-0013	1	*+Ring, Retaining
6			Gear Reduction Assembly (Includes Following Components)	26	515-0159	1	*+Key, Woodruff
	190-0445	1	3.3:1 Gear Ratio (Includes Parts Marked *)	27	190-0192	1	*+Shaft, Power Take-Off Gear, Helical Drive
	190-0290	1	4:1 Gear Ratio (Includes Parts Marked +)	28	190-0224	1	* 3.3:1 Ratio
7	815-0019	2	*+Screw, Drive		190-0447	1	+ 4:1 Ratio
8	515-0103	1	*+Key, Woodruff	29	510-0022	1	*+Race, Outer - Roller Bearing (Cup)
9	509-0016	1	*+Seal, Oil	30	510-0021	1	*+Race, Inner with Rollers (Cone)
10	800-0007	4	*+Screw, Cap - Hex Head (1/4-20 x 1")	31			Gear, Pinion
11	526-0063	4	*+Washer, Flat - Copper (1/4" Screw)		190-0447	1	* 3.3:1 Ratio
12	190-0016	1	*+Plate, Retaining - Bearing		190-0447	1	+ 4:1 Ratio
13	190-0306	2	*+Gasket	32	515-0142	1	*+Key
14	190-0115	1	*+Shim Set	33	190-0195	1	*+Washer, Thrust - Pinion Gear
15	505-0054	2	*+Plug, Pipe - 1/4 NPT	34	516-0012	2	*+Pin, Dowel
16	505-0057	2	*+Plug, Pipe - 1/8 NPT	35	190-0300	1	*+Housing (Match Set)
17	518-0172	1	*+Vent	36	190-0020	1	*+Gasket
18	505-0007	1	*+Reducer, Pipe (1/4 NPT to 1/8 NPT)	37			Plate, Instruction
19	800-0028	8	*+Screw, Cap - Hex Head (5/16-18 x 1")		99-1266	1	* 3.3:1 Ratio
20	850-0045	8	*+Washer, Lock (5/16")		99-1171	1	+ 4:1 Ratio

+ - Included in 190-0290 Gear Reduction Assembly.
* - Included in 190-0445 Gear Reduction Assembly.

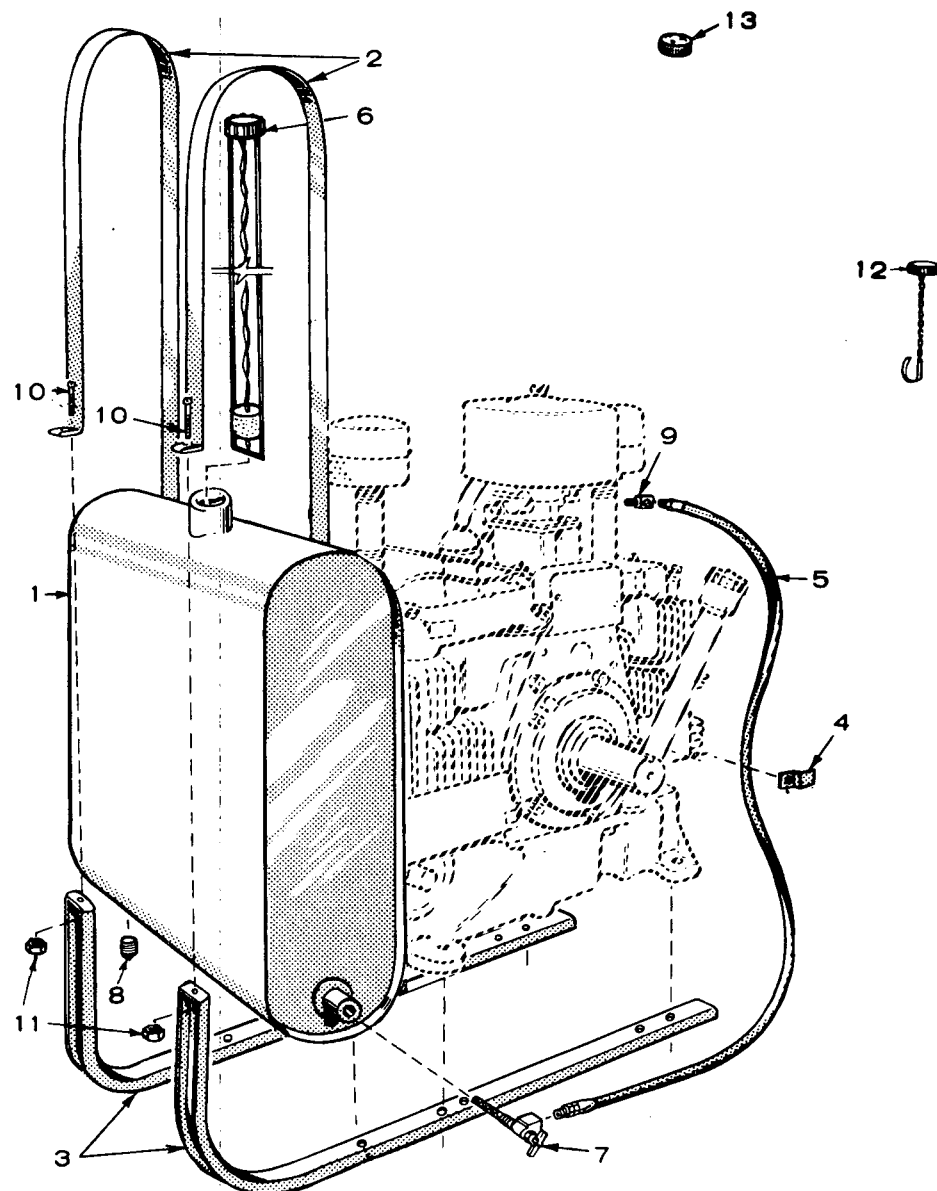
Option No. 10
Clutch



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	190-0289	1	Kit, Clutch Assembly (Includes All Parts Except Crankshaft)
1	520-0739	3	Stud (3/8-24 x 3/8-16 x 3")
2	800-0075	3	Screw, Cap - Hex Head (7/16-14 x 2")
3	850-0055	3	Washer, Lock - Spring (7/16")
4	104-0091	1	Nut, Hex - Hardened (3/8-24)
5	850-0050	1	Washer, Lock - Spring (3/8")
6	190-0288	1	*Clutch Assembly
7	104-0091	3	Nut, Hex - Hardened (3/8-24)
8	850-0050	3	Washer, Lock - Spring (3/8")
9	190-0171	1	Adapter, Clutch
10	515-0041	1	Key, Drive - Special
11	520-0738	1	Stud (3/8-24 x 3/8-16 x 4")

* - For Components, check nameplate and contact nearest Clutch Dealer.

**Option No. 11
Fuel Tank (Side Mounted)**

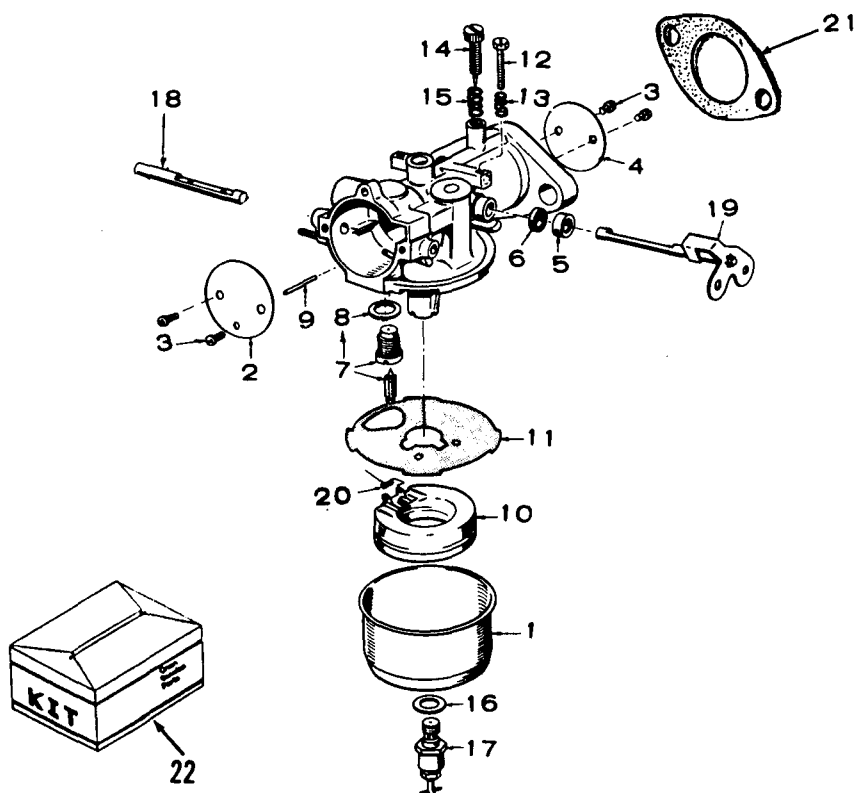


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	159-0984	1	Kit, Fuel Tank with Gauge (Includes Parts Marked *)
	159-0597	1	Kit, Fuel Tank Without Gauge (Includes Parts Marked †)
1	159-0981	1	† Tank, Fuel (Less Cap)
2	159-0596	2	† Strap, Fuel Tank
3	159-0595	2	† Bracket, Fuel Tank
4	134-0599	1	† Clip, Fuel Line
5	501-0008	1	† Line, Fuel
6	193-0207	1	* Cap and Gauge, Fuel Tank (For 2-5/16" Filler Neck) - Late Models

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
7	504-0013	1	† Valve, Shut-off
8	505-0057	1	† Plug, Tank Drain
9	502-0020	1	† Elbow, Carburetor Inlet
10	813-0108	2	† Screw, Machine - Round Head (#10-32 x 1-1/2")
11	870-0053	2	† Nut, Hex (#10-32)
12	159-0020	1	† Cap, Fuel Tank (For 2-5/16" Filler Neck) - Late Models
13	159-0007	1	Cap, Fuel Tank (For 1-3/4" Filler Neck) - Early Models

† - Included in 159-0597 Fuel Tank Kit.
* - Included in 159-0984 Fuel Tank Kit.

Option No. 12
Carburetor Components (Thermo-Magnetic Choke)
Spec A Through C



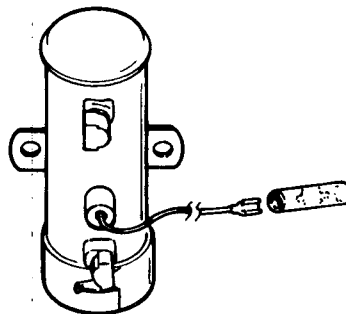
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	141-0803	1	Carburetor, Gasoline - Electric Choke (Includes Mounting Gasket)
1	141-0708	1	Bowl, Fuel
2	141-0741	1	Plate, Choke
3	141-0698	4	Screw, Round Head with Washer
4	141-0813	1	Plate, Throttle
5	141-0705	1	*Retainer, Seal
6	141-0661	1	*†Seal, Rubber
7	141-0830	1	*Seat Assembly, Valve
8	141-0811	1	†Washer, Valve Seat
9	141-0703	1	*Shaft, Float Pivot
10	141-0702	1	Float, Carburetor
11	141-0701	1	*†Gasket, Bowl
12	141-0700	1	Screw, Throttle Stop

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
13	141-0711	1	Spring, Throttle Stop
14	141-0713	1	*Needle, Idle Adjusting
15	141-0710	1	Spring, Idle Adjusting Needle
16	141-0077	1	*†Washer, Main Jet
17	141-0712	1	Jet, Main (Adjustable)
18	141-0679	1	Shaft, Choke
19	141-0709	1	Shaft, Throttle
20	141-0799	1	*Spring, Fuel Float
21	141-0281	1	*†Gasket, Carburetor Flange
22	KIT, CARBURETOR		
	141-0814	1	Repair (Includes Parts Marked *)
	141-0748	1	Gasket (Includes Parts Marked †)

* - Included in Repair Kit #141-0814.

† - Included in Gasket Kit #141-0748.

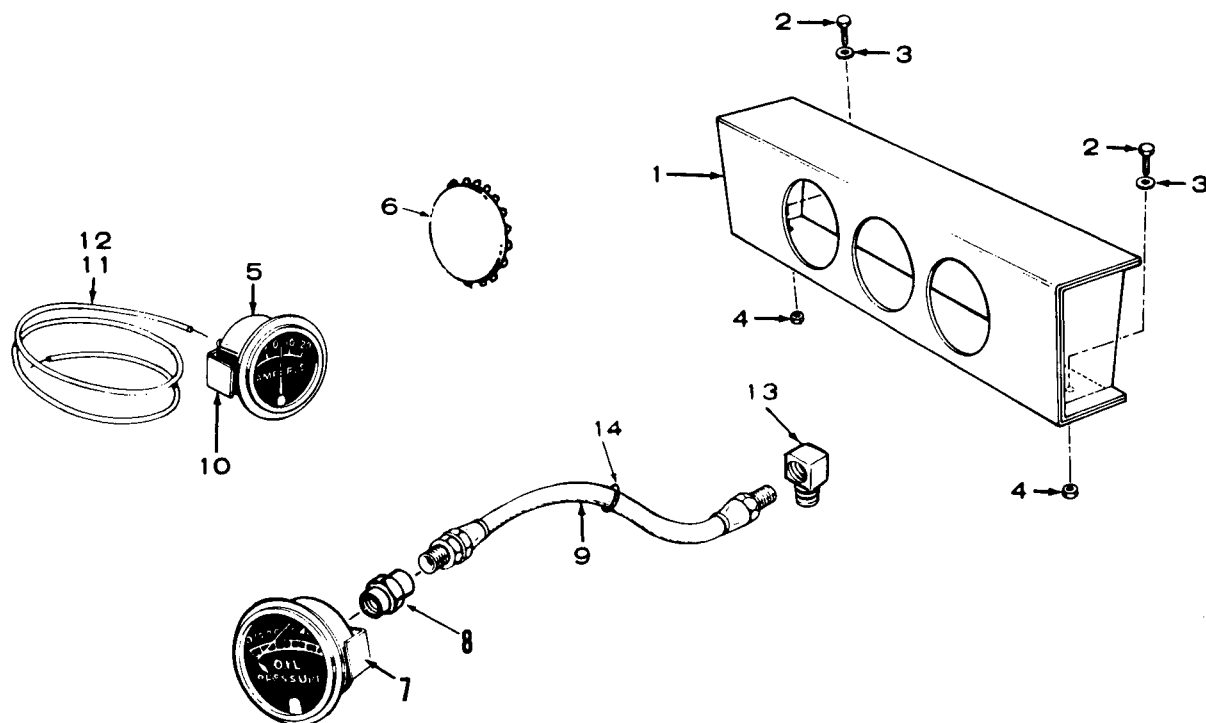
Option No. 13
Fuel Pump (Electric)
(149-1828)



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	149-1828	1	Pump, Fuel (Includes Terminal and Connector)

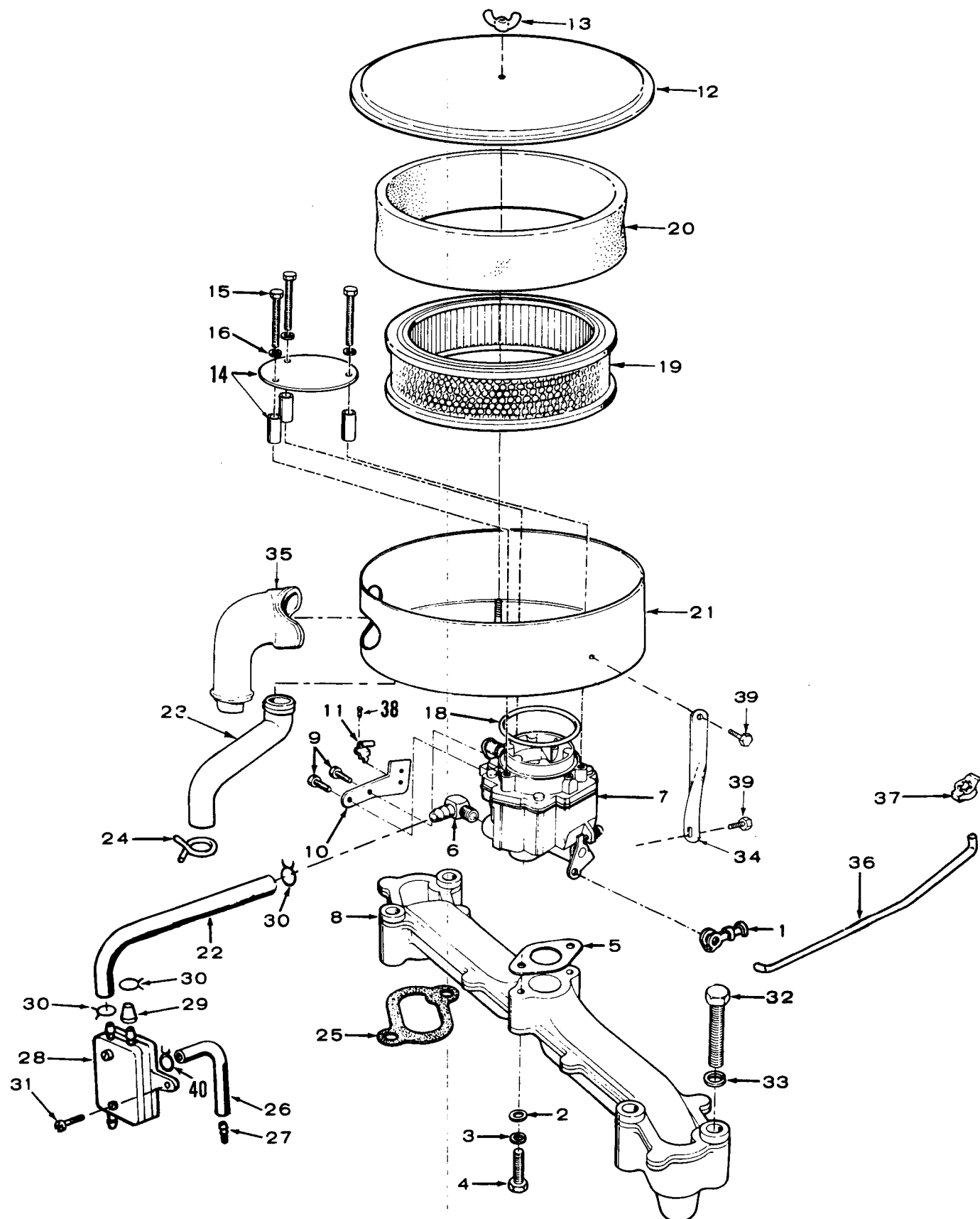
(No Breakdown Parts Available)

Option No. 14
Control (Engine) - Key 1



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	193-0218	1	Panel, Control
2	800-0002	2	Screw, Cap - Hex Head (1/4-20 x 3/8")
3	853-0013	2	Washer, Lock - ET (1/4")
4	862-0001	2	Nut, Hex (1/4-20)
5	302-0061	1	Ammeter (20-0-20)
6	517-0009	1	Plug, Dot Button
7	193-0005	1	Gauge, Oil Pressure
8	502-0051	1	Coupling, Pipe (1/8")
9	501-0004	1	Line, Oil - Flexible (12" Lg)
10	302-0270	1	Clamp, Gauge Mounting
11	336-0794	1	Lead, Wire - Ammeter to Battery (18")
12	336-2313	1	Lead, Wire - Ammeter to Alternator (18")
13	502-0020	1	Elbow, Street (90°) Oil Filter Adapter
14	508-0005	1	Grommet, Oil Line

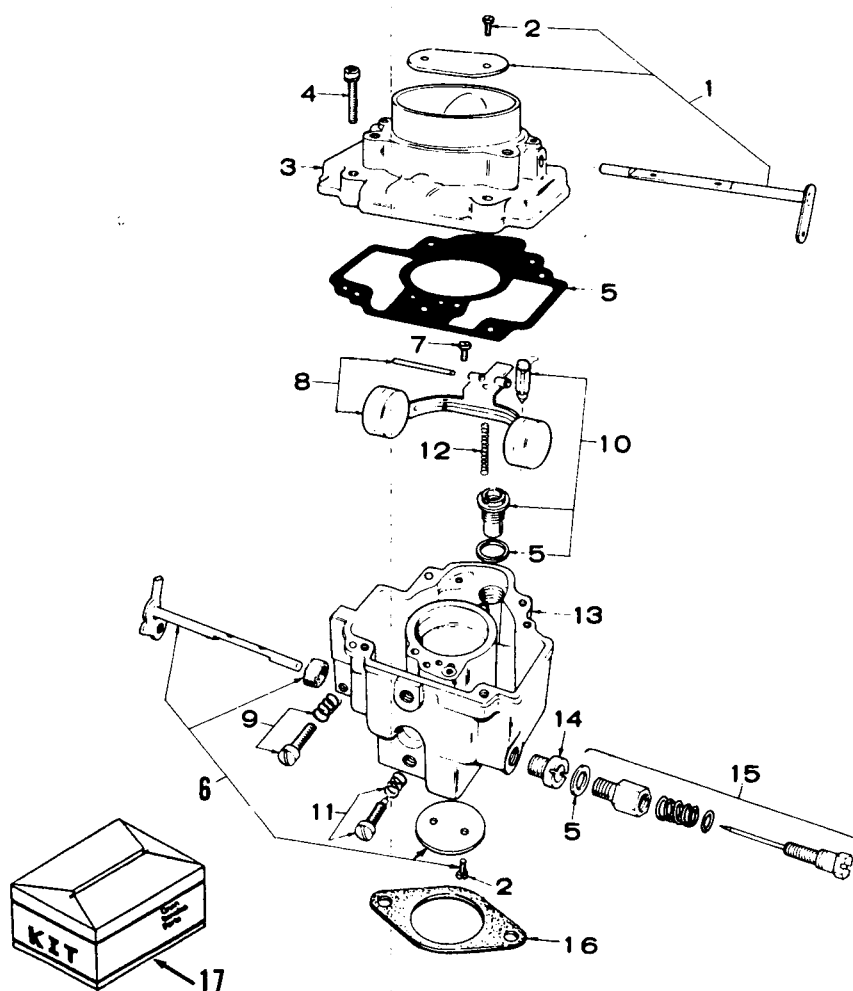
Option No. 15
Fuel System (Downdraft) - Spec A Through C



Option No. 15
Fuel System (Downdraft) - Spec A Through C

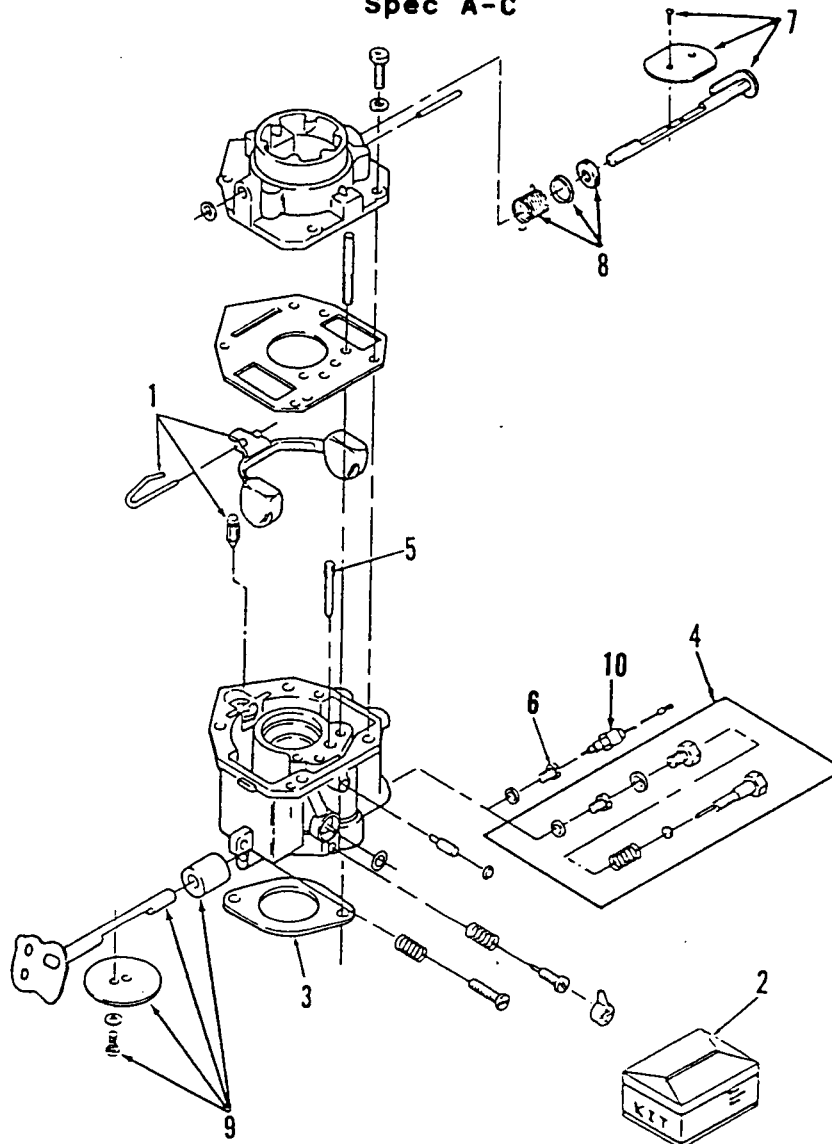
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	518-0004	1	Clip, Governor Rod		526-0008	3	Flat (#10 Screw) Use w/1 Piece Air Deflector
2	526-0115	2	Washer, Flat (5/16" Screw)				
3	850-0045	2	Washer, Lock - Spring (5/16")	18	509-0145	1	O-Ring, Carburetor Air Intake
4	800-0036	2	Screw, Cap - Hex Head (5/16-18 x 2-3/4")	19	140-1228	1	Element, Air Cleaner
5	154-0733	1	Gasket, Carburetor Mounting	20	140-1496	1	Wrapper, Air Cleaner Element
6	ADAPTER, CARBURETOR FUEL INLET			21	140-1498	1	Housing, Air Cleaner
	502-0313	1	Elbow, Hose (90°)	22	503-0874	1	Hose, Fuel (12" Lg)
	502-0395	1	Connector, Hose	23	123-1264	1	Tube, Breather
	502-0003	1	Connector, Inverted Male	24	503-0171	1	Clamp, Hose
7	CARBURETOR, GASOLINE - COMPLETE (See Separate Page for Components) (Includes Mounting Gasket)			25	154-1483	2	Gasket, Intake Manifold
	146-0306	1	Lua-5 (15/16" Venturi) (Walbro)	26	503-0910	1	Line, Fuel Pump Vacuum
	146-0309	1	Lua-2 (13/16" Venturi) (Walbro)	27	502-0395	1	Connector, Hose
	146-0312	1	Lua-9 (15/16" Venturi) (Walbro)	28	149-1982	1	Pump, Fuel (Includes Cap & Clamp)
	146-0431	1	Key 1 (Nikki)	29	149-1321	1	Cap, Fuel Fitting
	146-0428	1	Key 2 (Nikki)	30	503-0301	3	Clamp, Hose
8	154-2177	1	Manifold, Intake	31	815-0555	2	Screw, Tapping - Round Head (#10-24 x 5/8")
9	821-0002	2	Screw, Cap - HWH (#10-32 x 1/4")	32	800-0538	4	Screw, Cap - Hex Head (3/8-16 x 1-1/2")
10	153-0515	1	Bracket, Choke Cable	33	850-0050	4	Washer, Lock - Spring (3/8")
11	153-0514	1	Clamp, Choke Cable	34	140-1499	1	Support, Air Cleaner
12	140-1494	1	Cover, Air Cleaner	35	140-1495	1	Tube, Air Inlet
13	865-0020	1	Nut, Wing (1/4-20)	36	150-1613	1	Rod, Governor
14	145-0522	1	Plate, Air Deflector	37	870-0278	1	Clip, Governor Rod
15	815-0470	3	Screw, Machine - Hex Head (#10-32 x 1-1/2")	38	815-0391	1	Screw, HWH - Tapping (#10-32 x 1/2")
16	WASHER 850-0030	3	Lock, Spring (#10) Use w/2 Piece Air Deflector	39	821-0009	2	Screw, Cap - HWH (1/4-20 x 3/8")
				40	503-0731	1	Clamp, Wire (1/2")

Option No. 16
Carburetor Components (Downdraft) - Spec A Through C
Walbro



REF. NO.	PART NUMBER	PART DESCRIPTION	QTY. USED		
			A	B	C
	146-0306	Carburetor, (LUA-5, 15/16" Venturi)	X		
	146-0309	Carburetor, (LUA-2, 13/16" Venturi)		X	
	146-0312	Carburetor, (LUA-9, 15/16" Venturi)			X
1	146-0260	Choke Shaft Package	1	1	1
2	146-0142	Screw, Valve Mounting	4	4	4
3		Intake, Air (Not Sold Separately)	1	1	1
4	146-0247	Screw, Body to Intake	4	4	4
5	146-0220	Gasket Kit	1	1	1
6	146-0270	Throttle Shaft Package	1		1
6	146-0268	Throttle Shaft Package		1	
7	146-0222	Screw, Lever Pin	1	1	1
8	146-0262	Float Package	1	1	1
9	146-0261	Idle Speed Adjusting Screw Package	1	1	1
10	146-0289	Valve and Seat Package	1	1	1
11	146-0209	Idle Needle Package	1	1	1
12	146-0208	Spring Buoyancy	1	1	
13		Body (Not Sold Separately)	1	1	1
14	146-0238	Jet, Power	1	1	1
15	146-0282	Power Needle Package	1	1	1
16	154-0733	Gasket, Carburetor Mounting	1	1	1
17	146-0292	Kit, Repair	1	1	1

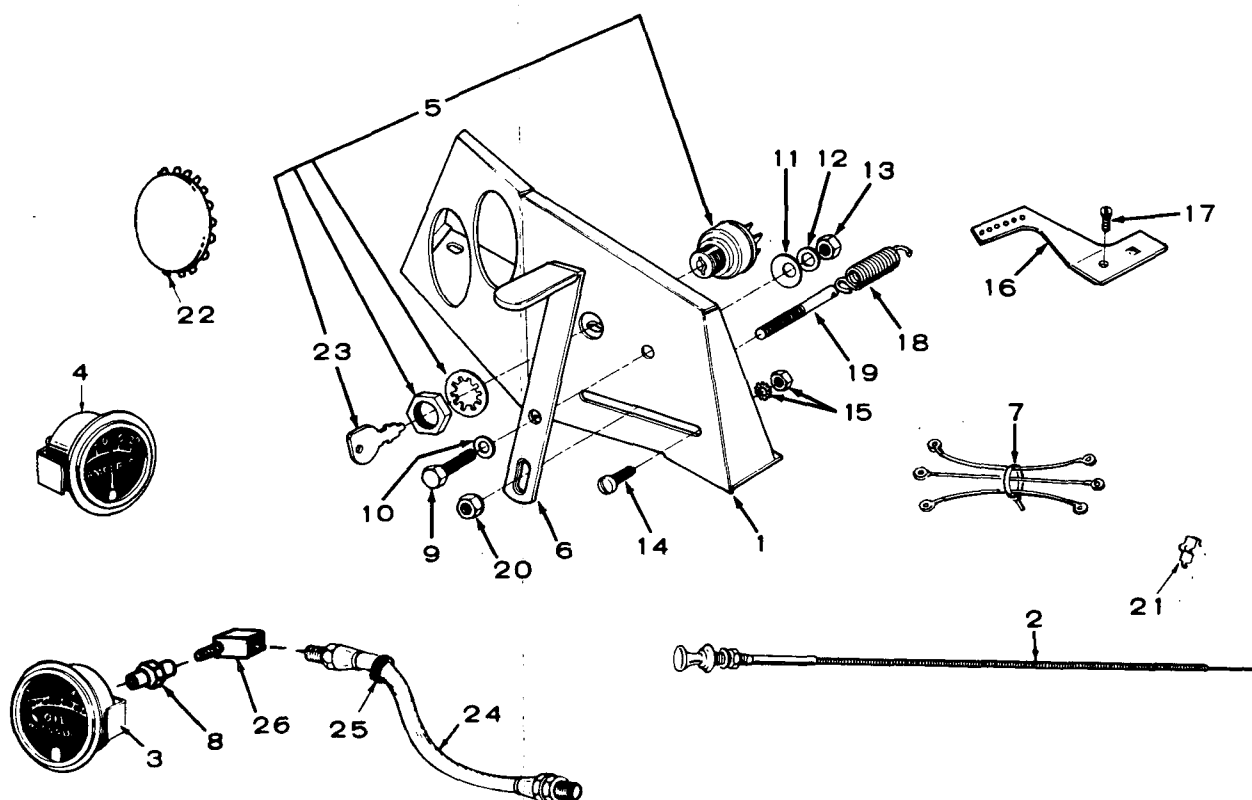
**Option 16A
Carburetor Components (Gasoline)
Spec A-C**



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Carburetor, Complete (Includes Mounting Gasket)
	146-0495	1	Key 2
	146-0497	1	Key 1
1	146-0437	1	Float Kit (Includes Float, Pin and Valve)
2	146-0499	1	Kit, Repair (Includes Screw and Plug Package, Gasket Package, Float Valve, Idle Adjust Needle and Spring, Mounting Gaskets, Idle Limit Cap)
3	154-0733	2	Gasket, Carburetor Mounting
4			Jet, Power - Fixed - Optional (High Altitude Application) (Includes Power Jet and Gasket, Retainer, Power Needle Spring, Power Needle and Power Plug Gasket)
	146-0458	1	Key 2
	146-0424	1	Key 1

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
5			Jet, Idle
	146-0425	1	Key 2
	146-0426	1	Key 1
6			Jet, Power
	146-0396	1	Key 2
	146-0501	1	Key 1
7	146-0433	1	Shaft, Choke - Kit (Includes Choke Valve, Valve Set Screw and Air Filter)
8			Lever, Choke - Kit (Includes Choke Lever Ring, Choke Spring and Choke Collar)
	146-0434	1	Key 2
	146-0435	1	Key 1
9			Shaft, Throttle - Kit (Includes Valve Set Screw, Air Filter and Throttle Valve)
	146-0503	1	Key 2
	146-0505	1	Key 1
10	146-0502	1	Solenoid, Fuel Cut-off

Option 17 Control (Engine)

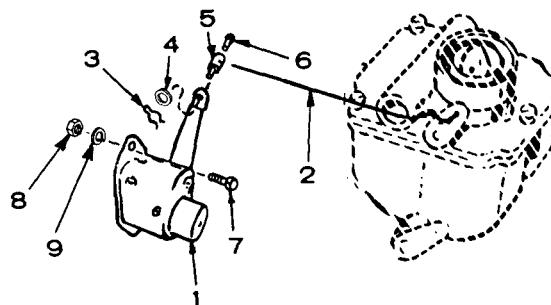


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	301-5065	1	Panel, Control
2	153-0097	1	Cable, Choke
3	193-0005	1	Gauge, Oil Pressure
4	302-0060	1	Ammeter (20-0-20)
5	308-0385	1	Switch, Ignition
6	152-0224	1	Lever, Throttle Control
7	338-1219	1	Harness, Wiring
8	502-0051	1	Coupling, Pipe - Hex
9	800-0005	1	Screw, Cap - Hex Head (1/4-20 x 3/4")
10	526-0016	1	Washer, Flat
11	152-0041	1	Washer, Tension
12	526-0015	2	Washer, Flat (1/4" Screw)
13	870-0065	1	Nut, Hex - Self-Locking (1/4-20)
14	815-0199	2	Screw, Machine - Fillister Head (#10-32 x 5/16")
15	870-0131	2	Nut, Hex with ET (#10-32)

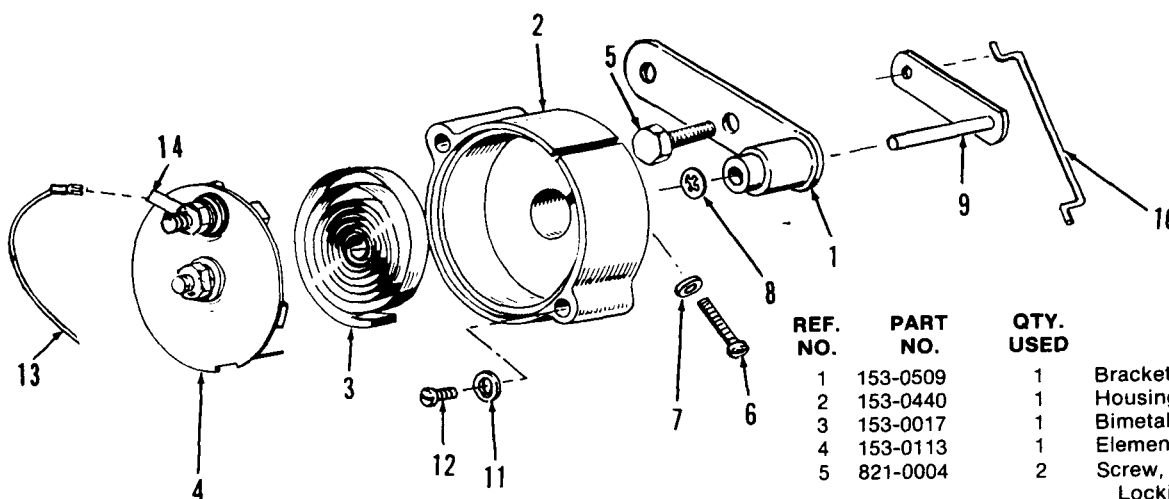
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
16	150-1749	1	Extension, Governor Arm
17	815-0181	1	Screw, Tapping - Hex Head with ET (#10-32 x 1/2")
18	150-1214	1	Spring, Governor
19	152-0177	1	Stud, Speed Adjusting
20	150-0621	1	Nut, Speed Adjusting
21	518-0176	1	Clip, Choke Cable
22	517-0009	AR	Plug, Dot Button
23	308-0490	1	Key, Ignition Switch
24	501-0009	1	Line, Oil - Flexible (36" Lg)
25	508-0199	1	Grommet, Rubber - Oil Line Through Housing
26	502-0065	1	Elbow, Inverted (45°)
	526-0180	1	Washer, Flat (1/4" Screw) Not Shown
	821-0018	1	Screw, Lock Head (1/4-20 x 5/8") Not Shown

**Option No. 18
Choke (Sisson)**

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	153-0223	1	Choke (Sisson)
2	153-0226	1	Link, Choke to Carburetor
3	516-0059	1	Pin, Cotter
4	526-0006	1	Washer, Flat (#12 Screw)
5	152-0155	1	Swivel, Choke to Linkage
6	815-0104	1	Screw, Machine - Fillister Head (#8-32 x 5/16")
7	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
8	862-0001	2	Nut, Hex (1/4-20)
9	850-0040	2	Washer, Lock - Spring (1/4")

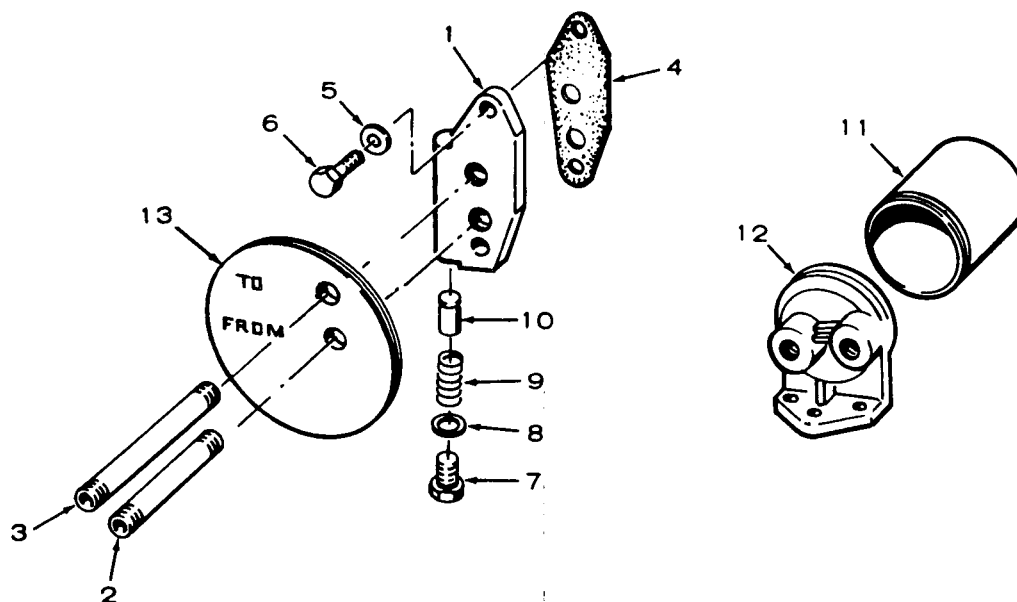


**Option No. 19
Electric Choke**



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	153-0509	1	Bracket, Choke
2	153-0440	1	Housing, Choke
3	153-0017	1	Bimetal, Choke
4	153-0113	1	Element & Cover, Choke
5	821-0004	2	Screw, Cap - Hex Head Locking (#10-32 x 5/16")
6	815-0110	1	Screw, Machine - Fillister Head (#10-32 x 7/8")
7	850-0030	1	Washer, Lock - Spring (#10)
8	518-0387	1	Ring, Retaining
9	146-0241	1	Shaft, Choke
10	153-0511	1	Link, Choke
11	526-0062	2	Washer, Flat - Brass (#10 Screw)
12	815-0285	2	Screw, Machine - Round Head W/ET (#8-32 x 5/16")
13	336-3909	1	Lead, Wire
14	332-0527	1	Terminal, Choke Cover

**Option No. 20
Oil Filter (Remote)**

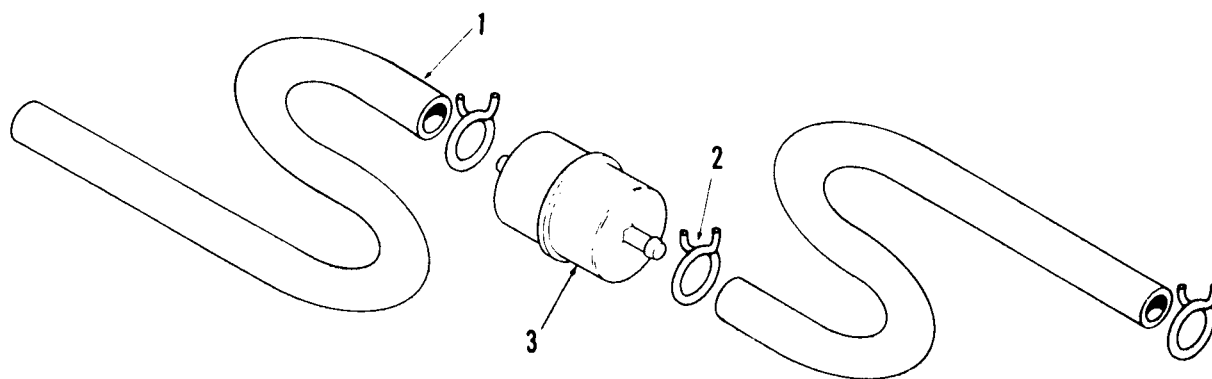


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
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NOTE: Hoses vary with each installation.
Purchase locally, hoses with a minimum
pressure rating of 150 PSI (1035 kpa).

1	122-0369	1	Adapter, Remote Oil Filter
2	505-0791	1	Nipple, Pipe (1/4 x 7")
3	505-0946	1	Nipple, Pipe (1/4 x 8")
4	122-0375	1	Gasket, Adapter
5	526-0065	2	Washer, Flat - Copper (5/16" Screw)
6	800-0028	2	Screw, Cap - Hex Head (5/16-18 x 1")
7	801-0050	1	Screw, Cap - Hex Head (3/8-24 x 1")
8	526-0066	1	Washer, Flat - Copper (3/8" Screw)
9	120-0140	1	Spring, By-Pass Valve
10	120-0398	1	Valve, By-Pass
11	122-0323	1	Filter, Oil
12	122-0476	1	Base, Remote Oil Filter
13	508-0184	1	Grommet, Air Seal

Option 21
Fuel Line Filter

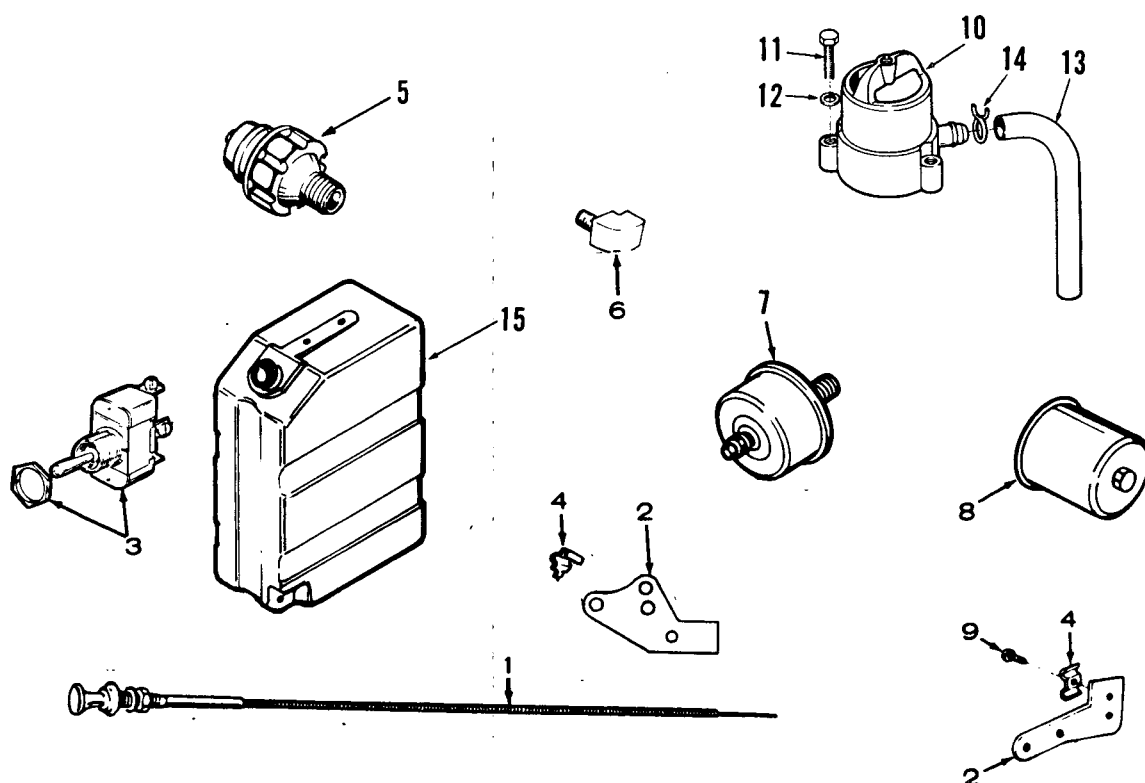


FS-1522-1

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0707	2	Hose (1/4" ID x 7/16" OD x 12" Long)

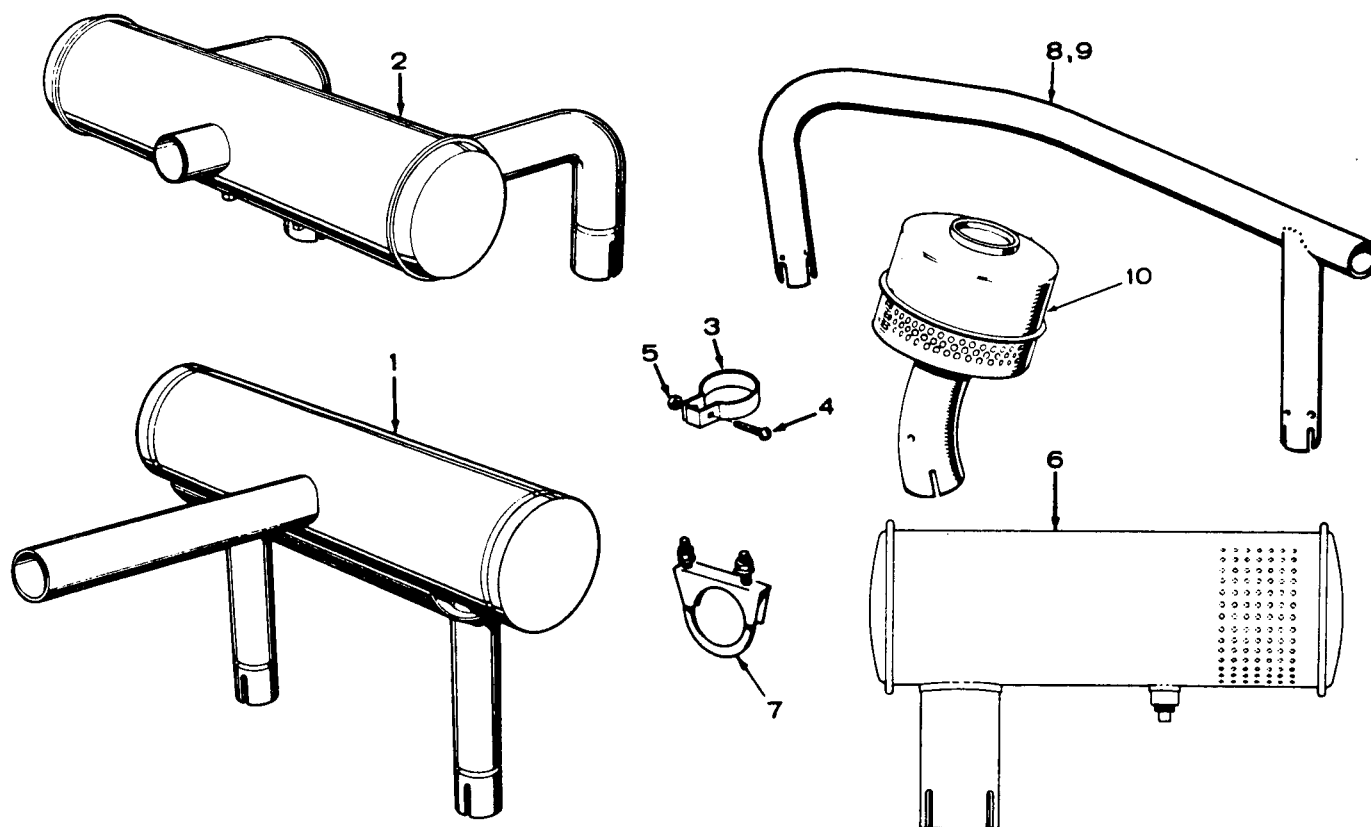
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
2	503-0301	3	Clamp, Hose (7/16")
3	149-2206-01	1	Filter, Fuel

Miscellaneous Options



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	153-0097	1	Cable, Choke
2	BRACKET, CHOKE CABLE		
	153-0327	1	Spec A Through C (Sidedraft Carburetor)
	153-0515	1	Begin Spec D (Downdraft Carburetor)
3	308-0140	1	Switch, Toggle - Start-Stop
4	CLAMP, CHOKE CABLE		
	518-0176	1	Spec A Through C (Sidedraft Carburetor)
	153-0514	1	Begin Spec D (Downdraft Carburetor)
5	309-0237	1	Switch, Low Oil Pressure
6	502-0020	1	Elbow, Street (90°) - Low Oil Pressure Switch (Key 2 Use 2)
7	193-0108	1	Sender, Oil Pressure (Engines with Electric Gauge)
8	122-0406	1	Filter, Oil (With Hex Nut)
9	815-0391	1	Screw, Tapping - Slotted HWH (#10-32 x 1/2")
10	140-1473	1	Adapter, Air Cleaner - Remote Air Cleaner
11	813-0106	3	Screw, RH (#10-32 x 1-1/8")
12	850-0030	3	Washer, Lock (#10)
13	503-0761	1	Hose, Breather
14	503-0769	2	Clamp, Hose - Breather
15	159-1150	1	Tank, Fuel - Plastic (3.5 Gal. Capacity)

Miscellaneous Exhaust Options



NOTE: Various exhaust options are used on NHC and NHCV industrial engines. Select according to illustration.

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	155-1379	1	Muffler, Exhaust
2	155-1686	1	Muffler, Exhaust
3	155-1219	2	Clamp, Muffler
4	805-0019	2	Screw, Cap - Hex Head (3/8-16 x 1")
5	862-0003	2	Nut, Hex (3/8-16)
6	MUFFLER, EXHAUST - RAYGUN		
	155-1698	2	With Spark Arrestor
	155-1660	2	Without Spark Arrestor
7	155-1239	2	Clamp, Muffler
8	MANIFOLD, EXHAUST - CROSSOVER		
	154-1609	1	Left Front Outlet
	154-1610	1	Left Rear Outlet
	154-1609	1	Right Rear Outlet
	154-1610	1	Right Front Outlet
	154-1492	1	Side Outlet
	154-1493	1	Top Outlet
9	154-2114	1	Manifold, Exhaust (Used with Sisson Choke)
10	MUFFLER, EXHAUST - PEPPER POT		
	155-1216	1	Angled Out
	155-1217	1	Straight

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